Green From the Roots: More technology vendors are designing with Mother Earth in mind. Read about the benefits. PAGE 26

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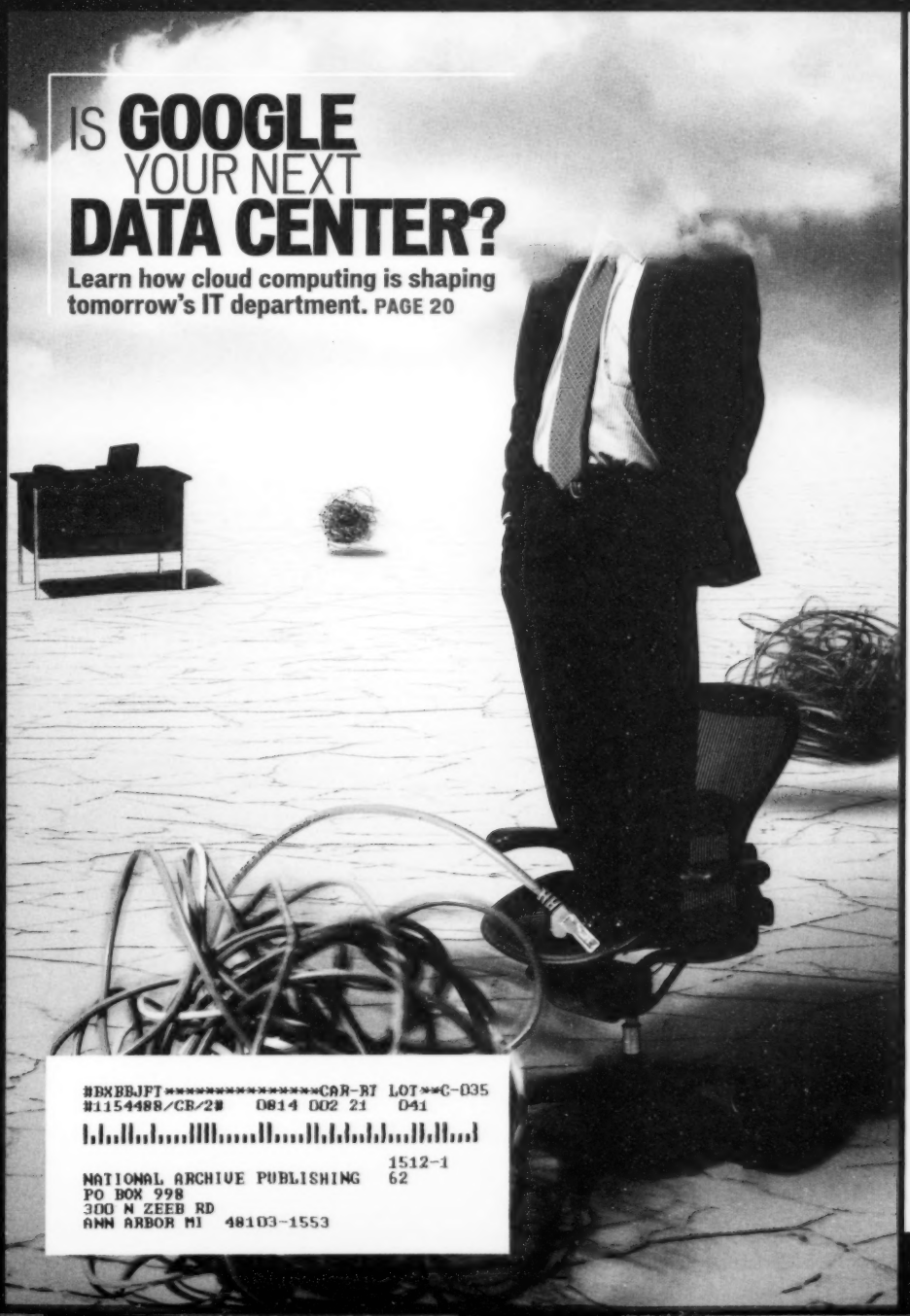

IS GOOGLE YOUR NEXT DATA CENTER?

Learn how cloud computing is shaping tomorrow's IT department. PAGE 20

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Inside

AUGUST 4, 2008
VOL. 42, NO. 31 $5/COPY

News Analysis

An explosion of data is forcing many IT managers to turn to new vendors to meet backup needs. PAGE 10

IT's verdict, now that the iPhone 3G is out: It ain't no BlackBerry or Windows Mobile device. PAGE 12

THE GRILL: **Obsolescence expert Peter Sandborn on planning for technologies' demise – right from the beginning.** PAGE 16

Opinion

You can't force people to accept accountability – but you can invite them to choose it. PAGE 30

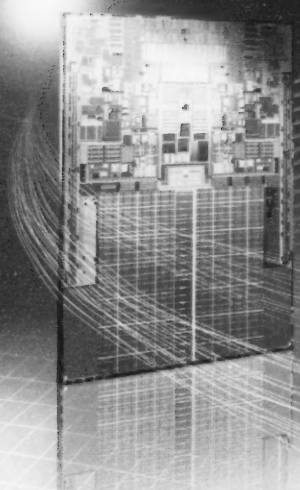
Careers

What are narcissists costing your company? PAGE 32

Don't Miss . . .

Catch up on cloud computing with our QuickStudy guide. PAGE 25

SOMETIMES YOU VISIT A DESK JUST BECAUSE YOU MISS VISITING DESKS.



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Inside

COMPUTERWORLD ■ AUGUST 4, 2008

■ NEWS DIGEST

4 IT admins are still being urged to apply **DNS patches**, despite some **performance issues**. | The **GAO** puts a spotlight on **encryption shortcomings** at federal agencies.

6 Financial exchanges are moving toward **measuring transactions** in **microsecond** increments. **Microsoft** shows off its **Sphere** computer prototype.

8 **NASA** and the **Internet Archive** launch a Web site with **140,000 images** from the NASA vaults.

NASA

■ NEWS ANALYSIS

10 IT Must Take Care in Switching Storage Vendors. Exploding data growth and security requirements force many companies to seek out new storage suppliers.

12 Not There Yet: The iPhone Has Some Growing to Do. The iPhone 3G remains less functional for corporate uses than its BlackBerry and Windows Mobile rivals are.

■ OPINION

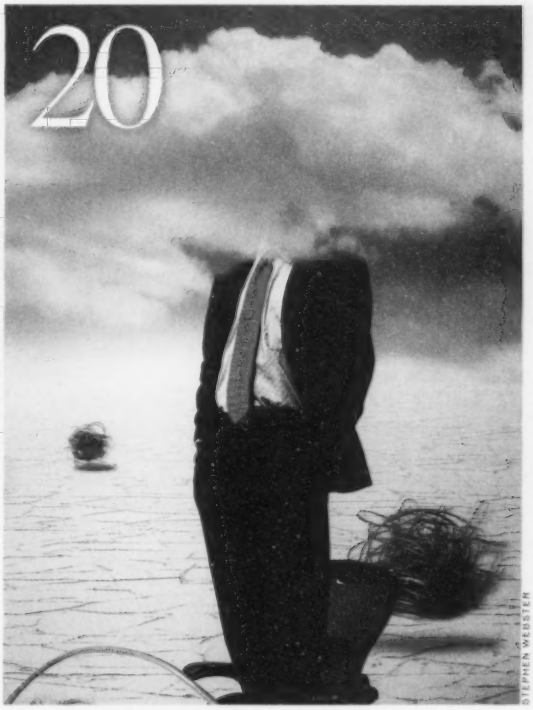
2 Editor's Note: **Don Tennant** doesn't want the U.S. government to be friends with the Cuban regime. But that isn't the same as saying Cuba should be thought of as the enemy.

19 **Michael Gartenberg** finds the software for Apple's new iPhone more significant for IT than the device itself.

30 **Paul Glen** says you can't force your employees to be accountable, but you can invite them to make that choice for themselves.

36 Frankly Speaking: **Frank Hayes** says encryption is hard. He knows it is because he has read the GAO's report on the efforts of federal agencies.

COVER: PHOTOILLUSTRATION BY STEPHEN WEBSTER



STEPHEN WEBSTER

■ FEATURES

20 Is Google Your Next Data Center?

COVER STORY: Lower costs, snap upgrades and other benefits of cloud computing are leading more IT organizations to pass along traditional infrastructure activities like storage and server management to managed services providers. How will this trend shape tomorrow's IT department?

26 Green From the Roots

As hardware vendors pay more attention to the environment, we're seeing IT products that require fewer resources (and toxins) to manufacture and less power to run. And they're easier to refurbish or recycle.

■ DEPARTMENTS

14 On the Mark: **Mark Hall** reports on the push for CIOs to become carbon information managers.

16 The Grill: Obsolescence expert **Peter Sandborn** talks about anticipating obsolescence, dealing with it and understanding that it's part of Microsoft's business plan.

25 QuickStudy: **Cloud Computing.** It overlaps with grid computing, utility computing, virtualization and clustering but has its own meaning: the ability to connect to software and data on the Internet instead of on your hard drive or local network.

29 Security Manager's Journal: **A Security Roundup in 20 Minutes Flat.** Mathias Thurman has a chance to make the case for better security every quarter. But he needs to be quick.

32 Career Watch: What are workplace narcissists costing your company?

34 Shark Tank: Computer engineering grad students come down from the ivory tower to lay out a data center. Guess what happens.

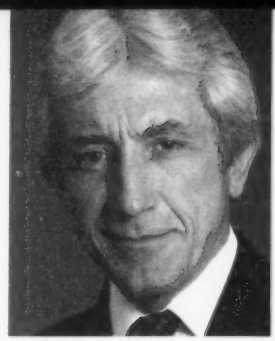
■ ALSO IN THIS ISSUE

Online Chatter	3
Company Index	34

■ EDITOR'S NOTE

Don Tennant

Too Many Enemies



MY SUGGESTION in last week's column that U.S. companies should be allowed to compete in Cuba hit a raw nerve with some readers who read the suggestion as some sort of endorsement of the Castro regime.

One who summed up my position as "left-wing baloney" seemed to speak for a lot of readers who commented on the article.

What had gotten me thinking about Cuba was an interview I'd conducted with Allison Watson, Microsoft's corporate vice president in charge of the worldwide partner group. I noted that when I asked Watson whether she was aware of any Microsoft partners that have done business with Cuba, Iran or North Korea, I was intrigued by what she said about Cuba.

"Frankly, from a Cuba perspective," she said, "*Cuba*'s not a bad word to anyone outside of the United States." I agreed, and said that the lack of engagement is hurting no one more than U.S. companies.

Watson's statement prompted another reader to chime in that "it is palpably untrue that the Cuban government is not criticized outside of the U.S. The list would include, but not [be] limited to, the U.N., the EU, Mexico, Spain and France."

Yet as all too often happens in this sort of discussion, the rebuttal mischaracterizes the original statement. The reader claimed that Watson said no one outside of the U.S. criticizes the Cuban government, but that's not even close to what she actually said. Pointing out that *Cuba* isn't a "bad word" outside of the U.S. isn't to say that it's not criticized. It says simply that overseas, Cuba's not seen as the bad place the U.S. government characterizes it to be. Outside of the U.S., it's not the enemy.

Is it a mischaracterization, in turn, to suggest that the U.S. considers Cuba an enemy? Clearly, our government opposes those in authority in Cuba, and with good reason. But is it really our enemy?

Unfortunately, it appears that it is. On July 15, the U.S. Attorney's Office for the District of Colorado announced that it was charging Platte River Associates, a Boulder software company, with "trading with the enemy." That "enemy" is Cuba.

■ Our government opposes those in authority in Cuba, and with good reason. But is the nation really our enemy?

The feds allege that in 2000, Platte River "provided specialized technical computer software and computer training, which was then used to create a model for the potential exploration and development of oil and gas within the territorial water of Cuba." Said U.S. Attorney Troy Eid: "Knowingly exporting sensitive U.S. technology to Cuba amounts to 'trading with the enemy' under federal law and won't be tolerated."

Whether or not you agree with the trade embargo, the fact remains that if this company or any company violates U.S. law, it should be punished. The law is the law. My concern is that there appears to be a prosecutorial overzealousness when it comes to trading with this particular "enemy."

According to a report in the *Daily Camera* online newspaper in Boulder, attorney Lee Foreman explained that Platte River sold the software to Repsol, a petroleum company in Spain. A Repsol employee subsequently went to Boulder for training, and someone from Platte River noticed that the seismic data involved was related to the Caribbean and Cuba, the *Daily Camera* reported, based on Foreman's explanation.

Citing the *Daily Camera* report, Clif Burns made an excellent point in the ExportLawBlog. "Platte River sold software to a Spanish company that then fed data into the program relating to areas around Cuba," Burns wrote. "Is Microsoft going to go to jail for selling Excel to a Canadian company that then uses the program to analyze its sales figures, including sales to Cuba?"

However straightforward or convoluted this turns out to be, the feds would do well to ponder a comment from another *Computerworld* reader.

"Maintaining and making friends is difficult," this reader wrote. "Seeing and making enemies is easy."

We need to be more willing to do the difficult. We have too many enemies as it is. ■

Don Tennant *is editorial director of* Computerworld *and* InfoWorld. *Contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

■ ONLINE CHATTER

RESPONSES TO:

Corporate IT Can Learn a Lot From Web 2.0 Coders

July 11, 2008

Heather Havenstein's article was intriguing. Unfortunately, I felt it missed the mark in a few places.

1. Break the barrier between developers and end users.

Good IT shops have been doing this for years. One of my professors back in 1984 preached the mantra of involving users upfront. This is not Application Development 2.0 — this is good practice, period.

2. Keep it simple.

Again, this is something that good development shops have been preaching for years.

3. Stick to the script.

Often, scripts are poorly documented. If a developer leaves, others have difficulty making updates, modifications or enhancements.

5. Let the users, not the developers, determine new features.

I worked in one environment where the president of IT determined the features, not the users. He was fired after about nine months of that nonsense.

Application Development 2.0 just sounds like good practices used by good IT shops for the last 20 years.

■ **Submitted by:** *Anonymous*

App Dev 2.0? Letting qualified users guide software development has been common practice for years. Having software in a continuous improvement cycle isn't new either. However, revisiting lessons learned in software development is always useful, especially applying those lessons to new software tools.

■ **Submitted by:** *Anonymous*

Three of the points were taught to me a looooong time ago at school. **1:** There should be minimal barriers between developers and users. **2:** Simplicity makes it easier to maintain. **5:** If there is a good relationship between developers and users, the users will be more comfortable asking for new features.

■ **Submitted by:** *Anonymous*

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AquaConnect Helps Macs, Others Share Desktop Apps

This Mac terminal server offers a surprisingly simple setup and is easy to use, and it manages to support a very broad base of clients, says Ryan Faas. But AquaConnect is a newer product, so planning and testing are very much required.

How to Configure and Deploy The iPhone 3G for Business

Before the iPhone can rival the BlackBerry in the workplace, IT admins will have to figure out how to deploy it to end users. Part 1 of a three-part series focuses on activation and configuration.

What Are You Doing for Me, And Why Don't I Know It?

Without a formal communication plan, you could find your IT function being outsourced without your knowledge. One former CIO outlines what this plan should include.

Opinion: Why Expensive Cell Phones Are Worth It

It's always good to economize. But saving a few bucks on a cheaper handset is almost always a bad idea, argues Mike Elgan; it usually makes sense to buy the phone you really want. Here's how to justify its cost.

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News Digest

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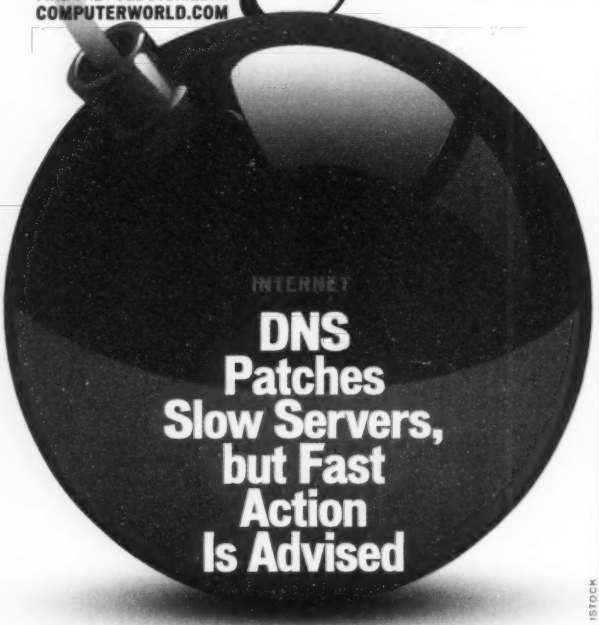
THE WEEK AHEAD

MONDAY: LinuxWorld opens in San Francisco, and Sybase kicks off its annual user conference in Las Vegas.

TUESDAY: Cisco plans to report its Q4 financial results.

WEDNESDAY: The "briefings" portion of the Black Hat USA 2008 conference starts in Las Vegas, with presentations by various security researchers (see related story, below).

FRIDAY: The Defcon hackers' convention follows Black Hat.



INTERNET

DNS Patches Slow Servers, but Fast Action Is Advised

ISTOCK

SOFTWARE PATCHES released in early July to protect against a critical flaw in the Domain Name System protocol have slowed servers running the Internet's most popular DNS implementation and crippled some Windows Server systems.

Meanwhile, security researcher HD Moore — who helped craft the first exploit code to be publicly released for the flaw — claimed last week that hackers were actively taking advantage of the cache-poisoning vulnerability using previously unknown exploits.

If Moore is right, that puts even more pressure on companies and ISPs to quickly patch their DNS servers, despite the performance problems disclosed by Microsoft Corp. and Internet Systems Consortium Inc. (ISC). Adding even more fuel to the fire is the fact that Dan Kaminsky, the researcher who discovered the flaw, plans to detail it at this week's Black Hat USA 2008 conference.

In a mailing-list message last Monday, Paul Vixie, the ISC's president, said that systems administrators shouldn't roll back the patches for the group's Berkeley Internet Name Domain software, even if their servers are running more slowly than before. "The vulnerability is of more concern than a slow server," he wrote.

BIND is distributed by vendors such as Novell, Red Hat and Sun Microsystems, all of which have released the updated versions of the ISC's software to their customers and urged IT managers to install the upgrades.

In his message, Vixie said that when ISC developers were building the initial patches, they became aware of a problem that could affect the performance of high-traffic DNS servers. But he added that because of the risks posed by the flaw, "we chose to finish the patches ASAP" and accelerate work on updates designed to fix the problem.

Separate port-allocation issues were found after the patches were released, Vixie said. Those are also supposed to be addressed in the updated patches, which were scheduled to become available late last week.

Microsoft issued a *mea culpa* about its DNS update on July 17, saying that the patch was crippling some machines running its Windows Small Business Server suite. Then, on July 25, it said the patch could also affect some network services on systems running Windows Server 2008, Windows Server 2003 and Windows 2000. In both instances, Microsoft detailed work-arounds.

— Gregg Keizer

SECURITY

Encryption Not a Snap For Feds

Despite a string of data breaches, only about 30% of the laptops and mobile devices used at 24 federal agencies had encryption tools as of last September, according to a report issued last week by the Government Accountability Office.

And, the GAO said, tests at six agencies found various implementation shortcomings, including configuration errors, a lack of training and insufficient monitoring of the encryption tools in use.

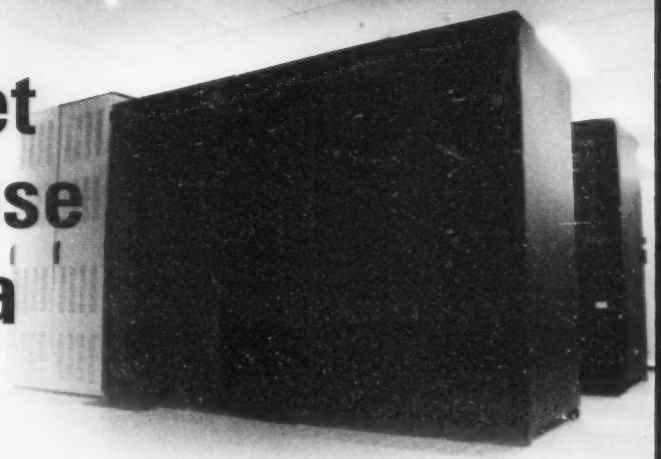
Mobile encryption lags behind federal efforts to encrypt network-based data, the GAO said.

The White House Office of Management and Budget recommended in 2006 that agencies encrypt all sensitive data stored on mobile systems. It then required them to do so in May of last year.

But the GAO said some agencies were still unsure of the mandate's "applicability." None, it added, had created "comprehensive plans" to guide their rollouts.

– GRANT GROSS, IDG NEWS SERVICE

How Do You Get Premium 3-Phase Technology at a Lower Cost?



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SERVERS & DATA CENTERS

Stock Exchanges Start Thinking in Microseconds

IN THE machine-vs.-machine world of financial trading, where IT is constantly trying to increase performance, transaction times are now being measured in increments of microseconds.

Over the past year, for example, the New York Stock Exchange and CME Group Inc., which operates the Chicago Mercantile Exchange and the Chicago Board of Trade, have begun to frame their thinking in units of microseconds as they look for ways to improve their transaction-processing throughput.

"It's all at the microsecond level right now," said Steve Rubinow, CIO at NYSE Euronext Inc., which operates the NYSE and the Amsterdam-based Euronext stock exchange.

Thanks to improvements in hardware, networking and trading algorithms, the time it takes exchanges like the NYSE and the CME to complete transactions is heading into the single-digit-millisecond range.

"It's all at the microsecond level right now.
STEVE RUBINOW, CIO, NYSE EURONEXT INC.

At such extreme speeds, microseconds matter — a lot. A microsecond-level performance improvement, multiplied across systems that are processing millions of transactions per hour, can quickly add up to a competitive advantage.

"We got pulled into it," John Hart, CME's managing director of technology engineering, said of measuring in microseconds.

And as the performance-measurement levels get finer, the IT staffs at the exchanges are trying to eke out improved response times by upgrading interconnects, tweaking operating systems and testing new systems.

For instance, CME is already piloting the first blade server version of Hewlett-Packard Co.'s NonStop fault-tolerant systems technology. Hart said the blade, which HP announced in June, offers twice as much throughput as earlier NonStop models.

Rubinow recently met with a representative from a storage maker who told him a new system could deliver "submillisecond" response times. Rubinow asked, "Do you mean 900 microseconds or 100 microseconds? Because that's a world of difference to us."

The rep said he wasn't sure and hadn't been asked that question before. "Well, get used to it," Rubinow responded, "because everybody in this industry is going to ask that question."

— *Patrick Thibodeau*

Short Takes

- Sun Microsystems Inc., after reporting that its profit dropped sharply to $88 million in its fourth quarter, warned that U.S. economic woes will mean lower IT budgets and smaller deals.
- IBM has agreed to buy Ilog SA for about $335 million in cash. IBM said that it plans to combine Ilog's business rules management software with its BPM and business optimization tools.
- McAfee Inc. has agreed to acquire Reconnex Inc. for $46 million in cash. McAfee plans to roll the Reconnex products into its data-protection products. The deal is expected to close next month.

CORRECTION

The consulting firm that issued a report titled "The State of Enterprise IT Budgets: 2008" was incorrectly identified in a story in the July 21 issue ("Six Stupid IT Budget Tricks"). The report came from Forrester Research Inc.

HARDWARE

Microsoft Offers Glimpse of Its New Sphere Computer

MICROSOFT CORP. showed off its new Sphere computer last week.

The machine, which was featured at the vendor's Research Faculty Summit in Redmond, Wash., is still a research prototype. It uses a touch-screen orb instead of a traditional flat-screen monitor.

The system combines touch capabilities with a projector and an infrared camera, noted Hrvoje Benko, a Microsoft Research human-computer interaction specialist, in a blog post.

Microsoft engineers have so far developed a picture and video browser, as well as three applications for the system.

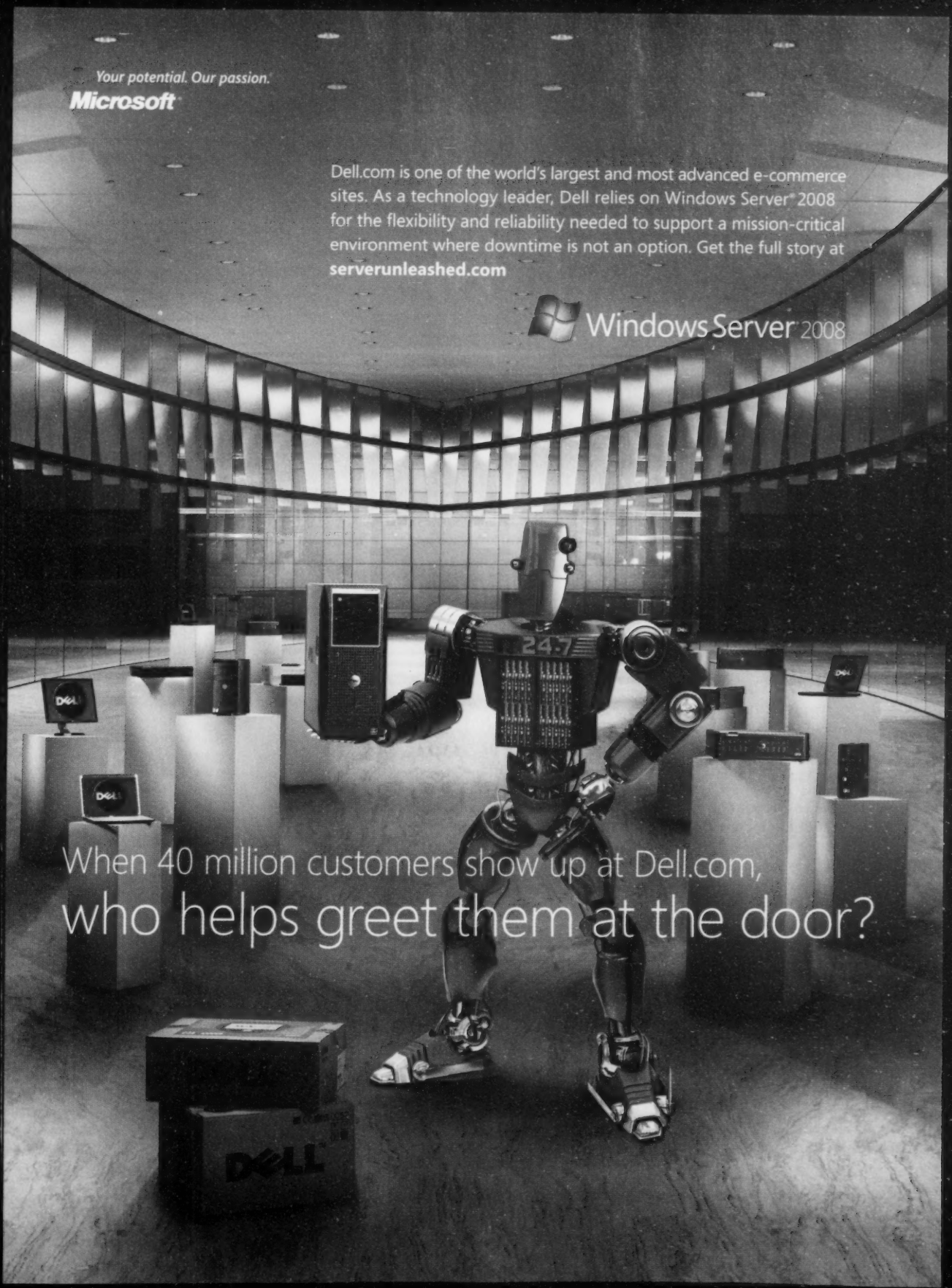
"It's important in that someone is spending time and money to look at different ways to design and use computers," said Dan Olds, an analyst at Gabriel Consulting Group Inc. "You never know where [it] might lead."

Microsoft researcher Hrvoje Benko with a prototype of the new Sphere computer.

Microsoft also showed attendees a deployment of 2,000 internally built temperature and humidity sensors that it's using to control energy consumption at its facilities.

Jie Liu, a Microsoft researcher, would not say whether Microsoft plans to commercialize the technology, though he noted that "there is lots of interest."

– SHARON GAUDIN, WITH NANCY GOHRING OF THE IDG NEWS SERVICE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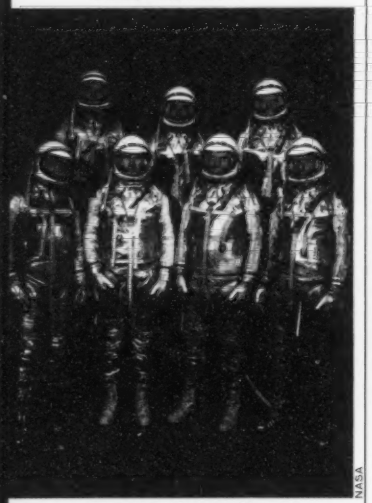
INTERNET

NASA Archive Project Puts Historic Images Online

NASA late last month launched an interactive Web site that initially combines 21 of the space agency's separately stored and managed imagery collections into a single online resource.



NASA

The original seven Mercury astronauts, who were selected by NASA on April 9, 1959.

The first implementation of the online archive, jointly developed with the nonprofit Internet Archive, includes more than 140,000 digitized high-resolution photos, audio and film clips of Apollo lunar missions, videos showing the evolution of spacecraft and their internal designs, and more.

More images will be added to future versions of the archive, which is being created as part of NASA's five-year agreement with the Internet Archive.

The 2007 agreement also calls for the site to eventually be enhanced with Web 2.0 tools such as wikis and blogs, according to Debbie Rivera, manager of strategic alliances at NASA.

"There's a lot more to come," she said, noting that ultimately, millions of NASA's images will be made available online to the public and to researchers.

In about a year, the partnership will start working on the enormous task of digitizing still images, films, film negatives and audio content, some of which dates back to 1915, according to Rivera.

The Internet Archive will manage and host the interactive image gallery on its cluster of 2,000 Linux servers at its San Francisco headquarters, said John Hornstein, director of the NASA images project for the archive service.

— Brian Fonseca

BETWEEN THE LINES *By John Klossner*

BENCHMARKS LAST WEEK

Electronic Data Systems Corp.'s stockholders approved the proposed $13.9 billion sale of EDS to Hewlett-Packard Co.

In its first out-of-cycle security alert since adopting a quarterly patching schedule three years ago, Oracle Corp. warned of an unpatched vulnerability in its WebLogic software and detailed a work-around.

10 YEARS AGO: The U.S. Securities and Exchange Commission set strict guidelines on what public companies had to disclose about the Year 2000 computer issues they faced.

Global Dispatches

Alcatel-Lucent Execs Jump Ship

PARIS – Alcatel-Lucent CEO Patricia Russo and Chairman Serge Tchuruk announced plans to resign their posts by year's end.

The announcement came at the same time the Paris-based telecommunications firm reported a second-quarter loss of €1.1 billion ($1.7 billion U.S.), almost double its €586 million ($912 million U.S.) loss in the same quarter a year earlier.

The company contended that the poor results did not prompt the departures. Rather, it said, with the 2007 merger of Lucent Technologies Inc. and Alcatel SA now complete, the company needs a smaller board and new management.
Peter Sayer,
IDG News Service

British Hacker Faces Extradition

LONDON – The highest U.K. court last week dismissed a British hacker's appeal of an extradition order to face charges of breaking into U.S. military computers to uncover evidence of UFOs.

Gary McKinnon, 42, of London, would be the first person to be extradited to the U.S. for computer-related crimes, if a final appeal to the European Court of Human Rights fails. He faces up to 60 years in prison.

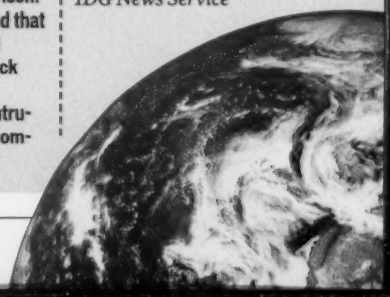
McKinnon has admitted that he used a program called RemotelyAnywhere to hack into PCs in the U.S.

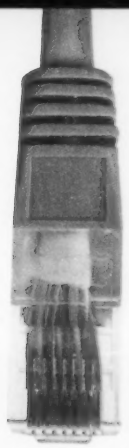
U.S. officials say the intrusions disrupted military computer networks.

McKinnon maintains that the hacking caused no harm.
Jeremy Kirk,
IDG News Service

BRIEFLY NOTED

Frank Huang, chairman of Hsinchu, Taiwan-based memory chip maker Powerchip Semiconductor Corp., was charged last week with conducting insider stock trading prior to his company's unsuccessful 2006 bid to buy Macronix International Co., which is also in Hsinchu. Huang faces four and a half years in prison and a fine of $60 million New Taiwan ($1.95 million U.S.).
Dan Nystedt,
IDG News Service





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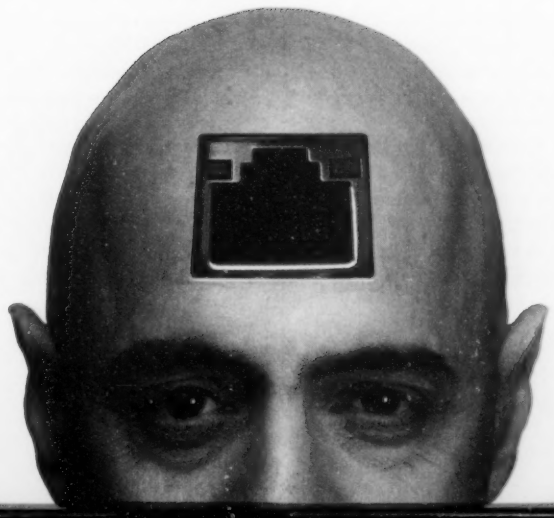
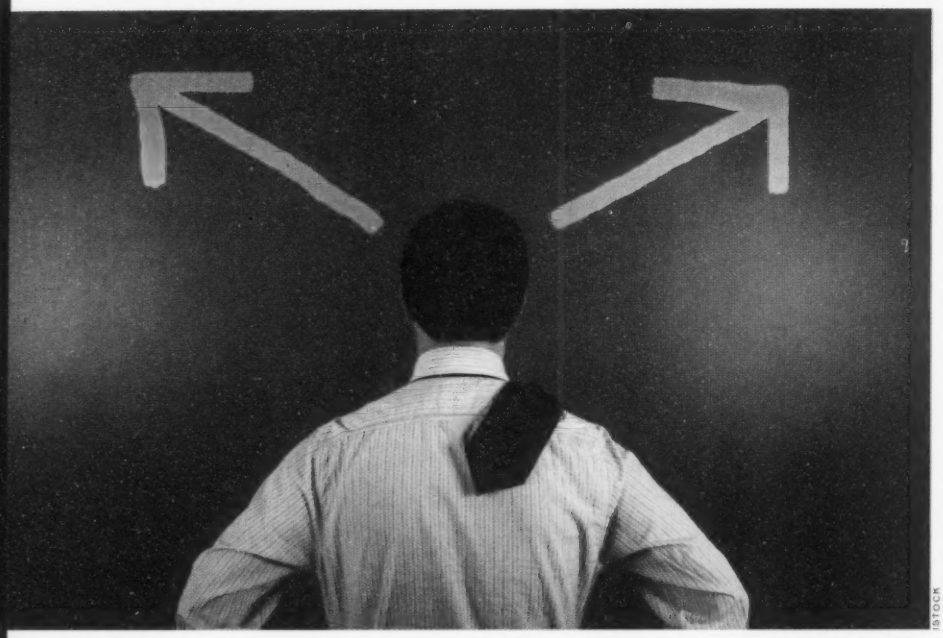


Data Explosion Forcing IT To Seek New Backup Tools



ISTOCK

Managers must carefully consider the consequences of quickly switching vendors to get the right technology.

By Brian Fonseca

THE NEED to control and secure a continuing explosion of data across the corporate world is forcing IT managers to constantly be on the lookout for new equipment that can handle perpetually evolving requirements.

According to analysts at Gartner Inc., there appears to have been a significant increase in corporate users looking to replace their backup systems in recent months.

"I would say that in the last year and year and a half, we've seen a big jump," said Alan Dayley, an analyst at the research firm.

In a Gartner survey of 70 IT managers last month, 66% of the respondents said that they're planning major redesigns of backup and recovery systems within 12 months, according to Dayley.

Meanwhile, in a survey of 395 IT managers by Enterprise Strategy Group Inc. (ESG), more than half of the respondents said that they have changed primary backup suppliers over the past three years.

Lauren Whitehouse, an analyst at the Milford, Mass.-based analyst firm, noted that more and more IT managers are painfully realizing that their outdated or poorly-performing backup tools can't handle shrinking backup windows and the complex management needs of their ever-growing data stores.

Many companies are looking to quickly install products that offer relatively new features such as data de-duplication and the ability to perform incremental and continuous snapshots of virtual disks.

At the same time, some companies are in a rush to include updates of storage systems in major IT projects like data center consolidations, application and infrastructure upgrades, and server virtualization efforts.

"I liken it to building an addition to your house; you're not going to take an old light fixture and put it in a new room," noted Whitehouse. "There are special conditions with an overhauled [IT] environment, and you have to look for a backup solution that is tuned for it."

Prior to moving to a new backup software vendor, IT managers must make sure that processes are in place to protect data before, during and after a migration. They must also analyze how switching storage vendors would affect corporate operations such as real-time business transactions, service-level agreements and compliance efforts.

And once a new backup system is installed, IT managers should evaluate it at least once a year to be sure that it is keeping up with data growth and security needs.

Dave McEldowney, division vice president of IT at Bar-S Foods Co., said the meat processor and distributor evaluated the security risks before deciding to replace its Galaxy backup software from CommVault Systems Inc. last year.

He said the company determined that the benefits of changing vendors outweighed the risks because of problems with the product

— which Bar-S had used since 2000 — and with its vendor.

Phoenix-based Bar-S turned to Symantec Corp.'s Backup Exec 11d software after Galaxy failed an average of six times per year and because nearly half of the data backed up could not be restored.

The frequency of ineffective backups led Bar-S employees to copy sensitive business data to nonsecured thumb drives and external storage drives, creating significant security issues, McEldowney said.

Even though Bar-S was paying yearly maintenance fees, he said, the CommVault support staff didn't return phone calls for help or assist with installing updates of the Galaxy software.

Further, he said Galaxy lacked a strong centralized-management tool and had trouble enabling remote tape backups if the main data center went offline.

"It was a wonderful relationship until we paid the bill and bought the software," said McEldowney.

Bar-S runs two storage-area networks (SAN) with 4TB apiece in a virtualized Windows Server and Red Hat Linux environment.

McEldowney said he still keeps a small instance of Galaxy running just to ensure that off-site backup tapes that weren't switched over during the transfer process can still be read.

Dave West, vice president of worldwide marketing and business development at Oceanport, N.J.-based CommVault, said that several large companies use Galaxy "in just the way" Bar-S did, and they haven't had any difficulties. He called the Bar-S criticism a "rare exception rather than the norm."

Ohio State University's communications office said it had a similar experience with EMC Corp.'s Retrospect backup software because of what school officials called stagnant updates and crude performance.

Wayne Tolliver, a departmental systems manager, said the communications office abandoned the EMC product for Atempo Inc.'s Time Navigator 4.2 backup tool in mid-2007.

The office, which handles Web content, print and live video production for the university, installed Retrospect in 2004 after it adopted an Apple-based storage and server infrastructure.

Tolliver said that Retrospect development "languished" after EMC acquired its maker, Dantz Development Corp., later in 2004.

He contended that promises that EMC made to support updated Apple Inc. products went unfulfilled, and that IT personnel were forced to work around Apple upgrades, such as Mac OS X v10.4 (code-named Tiger), which was released in 2005.

An EMC official confirmed that the last major update to Retrospect for Mac was in late 2005 but noted that the company last month released its first Retrospect Mac client that runs natively on Intel-based Apple processors.

"What drove us from Retrospect was lack of innovation," said Tolliver. "Our environment kept experiencing growth, and users wanted more features for backup. We just couldn't provide it. Keeping the lights on with Retrospect was becoming impossible."

Tolliver said EMC's backup software could not easily support large files created by the Ohio State multimedia operation, forcing IT staffers to partition chunks of data to satisfy backup requirements.

EMC now says it plans to deliver a version of Retrospect for the Macintosh featuring a new native Intel engine by early 2009.

The communications office runs four Apple PowerPC-based Xserve servers, two Intel Xeon-based Xserve machines, two Xserve storage RAID units with 14 drives each, and a Spectra Logic T50 tape library.

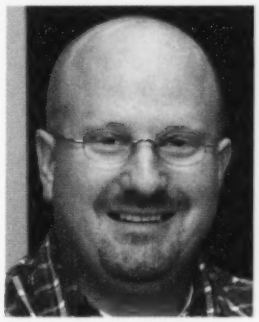
Meanwhile, Atlanta-based Newell Rubbermaid Inc. is continuing to use the CommVault galaxy software it installed in 2003 because of its ability to keep up with the rapid data growth at the maker of housewares, home furnishings and office products, said Matt Frehner, IT infrastructure manager at Rubbermaid.

Frehner said the company replaced CA Inc.'s ArcServe product in 2003 because Galaxy promised to better keep up with Newell's data growth and could better support the company's move from a Novell network to a Microsoft network.

"I wanted [a product] to grow with because I knew at some point in time we could go from gigabytes to terabytes," noted Frehner. The amount of data the company stores has mushroomed from 500GB to 24TB since 2003, and CommVault's tools have kept pace.

Last month, Frehner upgraded from Galaxy to CommVault's next-generation Simpana data management suite, which adds integrated search and discovery features. The disk- and tape-based tool backs up 13TB of data each night from the company's SAN, network-attached storage and tape library machines.

In an ESG survey earlier this year, 121 IT managers listed a variety of events that could force them to change backup vendors quickly. They included new restrictions on corporate data access, changes in security regulations, poor product performance and poor customer support. ■



"What drove us from Retrospect was lack of innovation. Our environment kept [growing], and users wanted more features for backup. We just couldn't provide it.

WAYNE TOLLIVER, DEPARTMENTAL SYSTEMS MANAGER, OHIO STATE UNIVERSITY

Not There Yet: The iPhone Has Some Growing to Do

Apple's new 3G model still lags behind BlackBerry and Windows Mobile devices for corporate IT apps.

By Eric Lai and Matt Hamblen

THE iPHONE 3G may have a lock on this year's Sexiest Gadget title. But in the pragmatic world of corporate IT, the flashy new handheld is no pinup.

That was the case when Apple Inc. introduced the iPhone 3G two months ago. And it's even more so now that IT managers, independent software vendors and analysts can actually get their hands on the device.

Apple has made improvements over the original iPhone, primarily through its licensing of Microsoft Corp.'s ActiveSync technology. But from a corporate IT standpoint, the 3G hardware and its companion iPhone 2.0 software remain less functional and mature than their BlackBerry and Windows Mobile counterparts.

"It's a great product, but it has a ways to go," said a senior IT official at a large U.S. company. The manager, who asked not to be identified, evaluated the iPhone 3G but decided not to deploy it, citing configuration and security weaknesses as well as shortcomings in tech support and even usability.

For example, basics such as the ability to quickly search e-mail and edit calendar entries are missing, the manager said, adding that IT concerns include the lack of native encryption capabilities and support for saving instant messages.

Manageability and security are two big areas where the iPhone still lags behind its more established rivals.

Research In Motion Ltd.'s BlackBerry Enterprise Server software supports centralized management and both AES and Triple DES encryption, and it provides more than 200 predefined policies for enforcing security and other IT settings.

Microsoft is trying to catch up to RIM with its System Center Mobile Device Manager tool, which includes 125 built-in policies for Windows Mobile 6.1 phones. A second-tier offering gives IT managers 45 preset policies as part of the ActiveSync implementation in Exchange Server 2007 Service Pack 1.

IPhone 2.0 also uses Exchange ActiveSync, but many of the features supported by Microsoft aren't there, including the ability to natively encrypt data and to block users from downloading third-party software.

Vivek Kundra, the District of Columbia's chief technology officer, has bought 10 of the new iPhones for testing. The 3G could provide "the dream convergence we've waited for" in a handheld, he said.

But without native encryption, the device won't be used in public-safety or other critical applications, Kundra noted. And to avoid problems with the process of loading applications onto iPhones, he plans to store a variety of data on an intranet so users can access it via the device's browser.

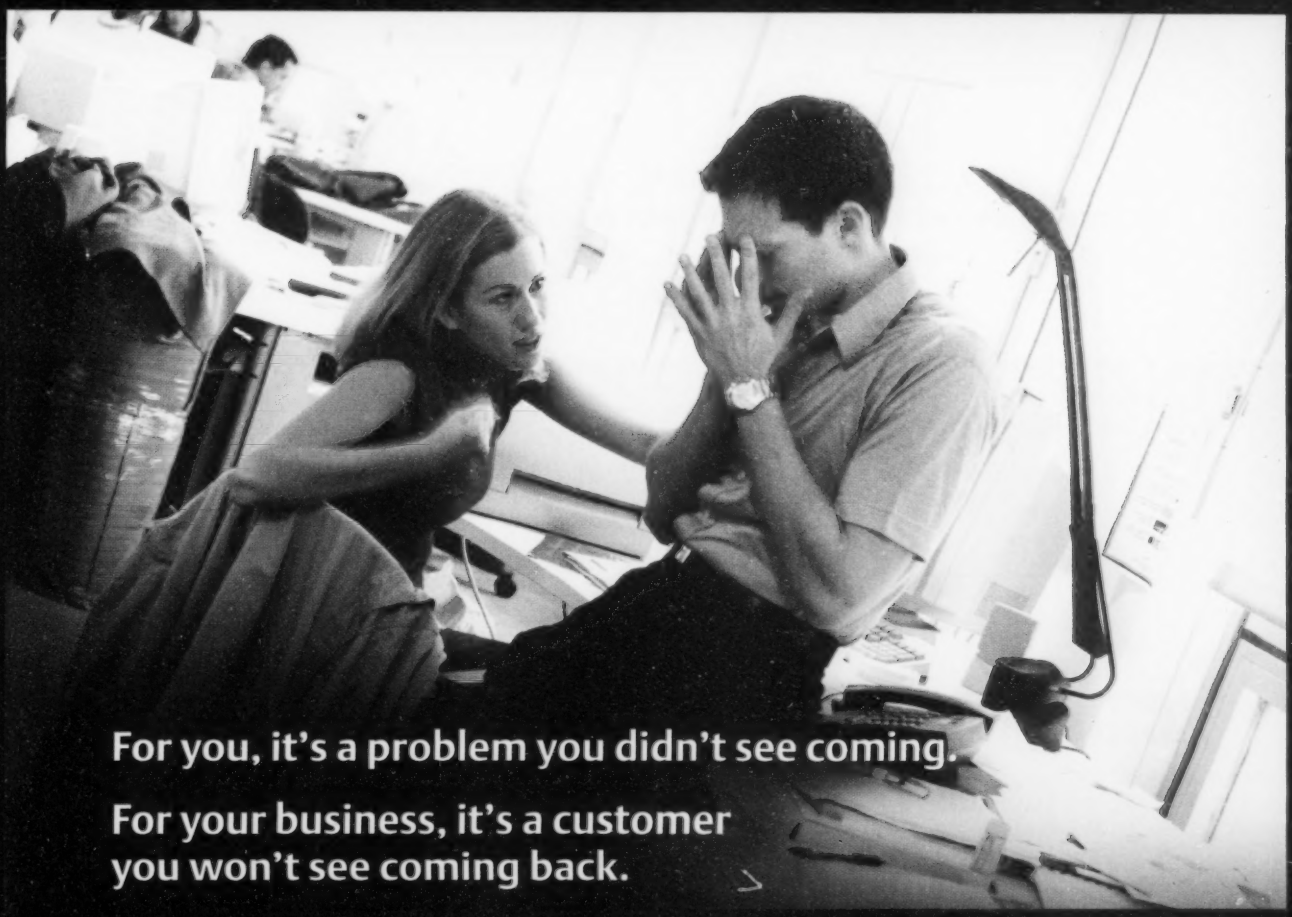
App deployment is an issue because of the need to use iTunes and Apple's new App Store to add software to iPhones. IT managers can create lists of users who are allowed to download specific applications from the App Store, but that approach doesn't scale past 100 users.

Apple also plans to let companies set up mini App Stores on their own servers. But it hasn't said when, and that method would still require iTunes and rely on users to synchronize their iPhones with their PCs.

And although 500 third-party applications are now available for the iPhone, that is still far less than the 18,000 and 4,000 apps that can be had for Windows Mobile and BlackBerry devices, respectively, at Web storefronts like Handango.com.

Lifetime Products Inc., which makes tables, chairs, sheds and other products, has 390 employees using Windows Mobile smart phones. The pressure to support iPhones is "always there," said CIO John Bowden. But Lifetime runs a Microsoft-based workflow application on its existing phones and is deploying the vendor's Dynamics CRM software for its sales staff.

Once end users understand the benefits they can get from such apps, Bowden said, "the allure of the iPhone fades very quickly." ■



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On the Mark

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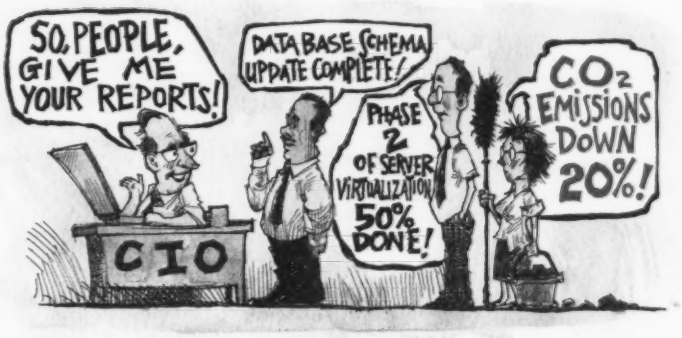
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CIO

MATTHEW FAULKNER

CIOs Morph Into CIMs

CIOs ARE perfectly positioned to become the carbon information managers as well as the IT leaders for their organizations. ■ Just what your department needs: more work. ■ Carbon information managers will play "an emerging role" in the modern enterprise, according to a report released last month by the U.K.'s Carbon Disclosure Project and IBM. CIMs will lead the push to define how businesses measure their carbon footprints and oversee the projects that are needed to reduce those footprints.

And have no doubt that it will be your company's goal to reduce its production of greenhouse gases, the report says. Not just to curb the rate of growth of production, but to make true cuts.

CIOs should lead efforts to reduce an organization's carbon footprint, Hodges argues.

"This is a major, long-term issue," says Richard Hodges, CEO of GreenIT Inc., an IT consultancy in Sonoma, Calif. "It's not a fad."

Hodges says every international agreement he knows of has set greenhouse gas targets that are lower than today's production levels. In the CDP/IBM report, some of the companies profiled lay out specific carbon-emission goals, some of them calling for as much as a 50% reduction by 2020.

Leading a companywide effort to cut greenhouse gas production is fraught with challenges, Hodges acknowledges. Risk-averse CIOs will be leery of the task.

But who else in the organization, he asks, has insight into as many departments and groups as the head of IT? Hodges also contends that the tools needed to measure and reduce greenhouse gases will likely be IT-based, making CIOs ideally suited to shoulder the duty of carbon information management.

You should start with practical measures in IT itself, Hodges advises. First and foremost, remove useless or underused gear. And, yes, turn out lights in rooms without people. Go to double-sided printing. Eliminate personal printers from offices and cubicles.

Hodges says all these initiatives sound simple, but they involve corporate cultural issues that can hamper success.

Rolling out a new ERP system might be a walk in the park compared with removing a seldom-used printer from a VP's office.

PhishMe Targets Gullible Users

Intrepidus Group Inc. in Chantilly, Va., unveiled its PhishMe service late last month. In effect, it's a tool that lets IT departments phish their own end users.

CEO Rohyt Belani says the new software-as-a-service offering allows you to set up mock phishing attacks in order to measure how aware employees are of phishing and then educate them on how to avoid getting hooked by phishers.

Aaron Higbee, chief technology officer at Intrepidus, says identity thieves have moved beyond targeting PayPal and eBay users and are now training their sights on corporate workers with what are called spearphishing attacks. In these attacks, official-looking e-mails ask recipients to do things such as update their 401(k) information, with the intent of stealing the data, and possibly the funds.

Worse, from an IT security perspective, are spearphishing messages that appear to originate from the IT department and ask end users to test their passwords by clicking on a link.

2,000
Number of targeted spearphishing attacks in May, according to VeriSign.

Belani says you can run the tests on your users multiple times and measure their (presumed) improvement. A comic-strip format is used to show those who take the phish bait how to recognize a phishing expedition.

Be sure to include your top-level managers in any tests you conduct, suggests Higbee. In what are called "whaling attacks," criminals specifically target C-level execs, since they (allegedly) know so much about the business.

PhishMe pricing starts at $4,800. ■

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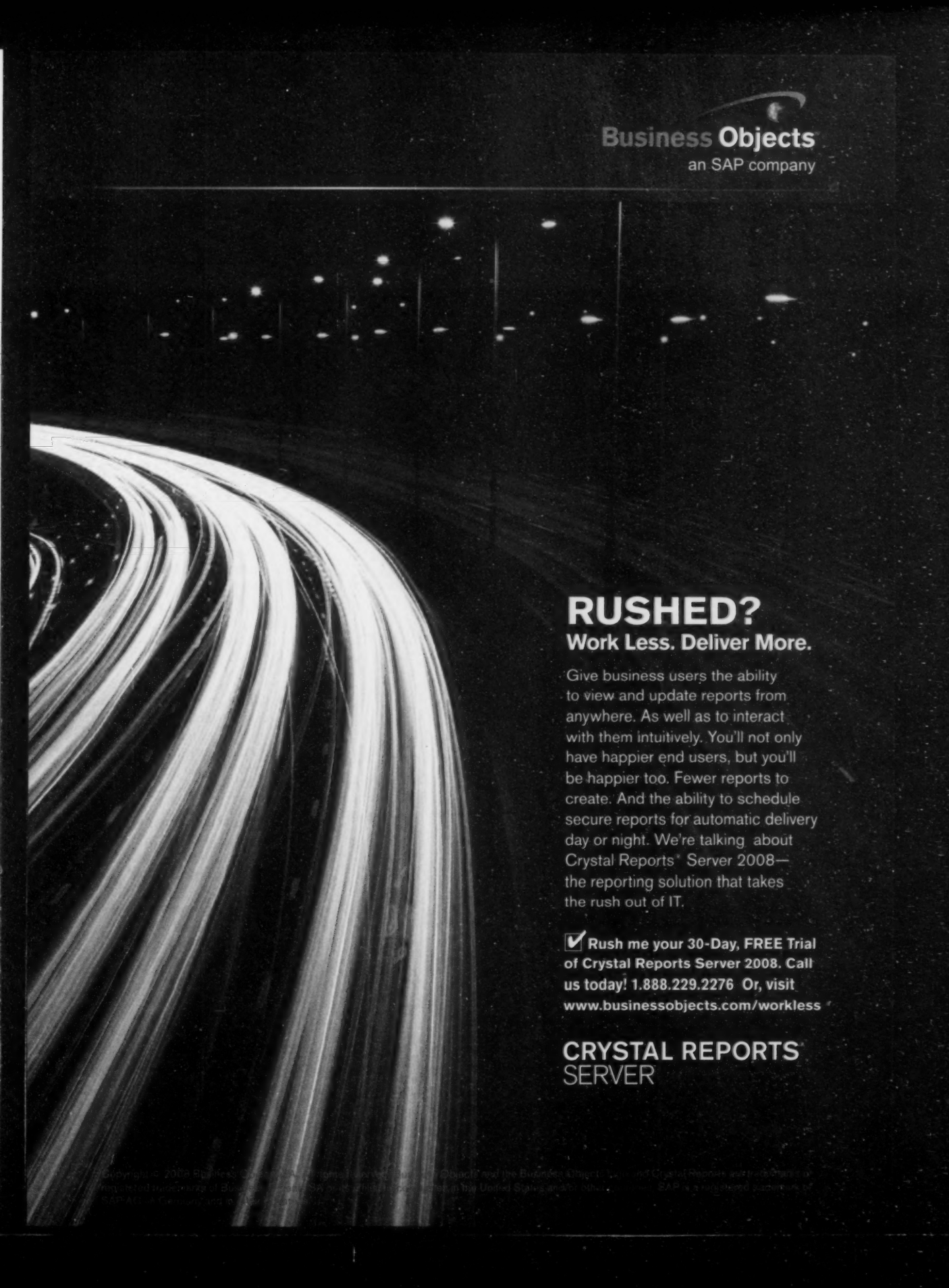
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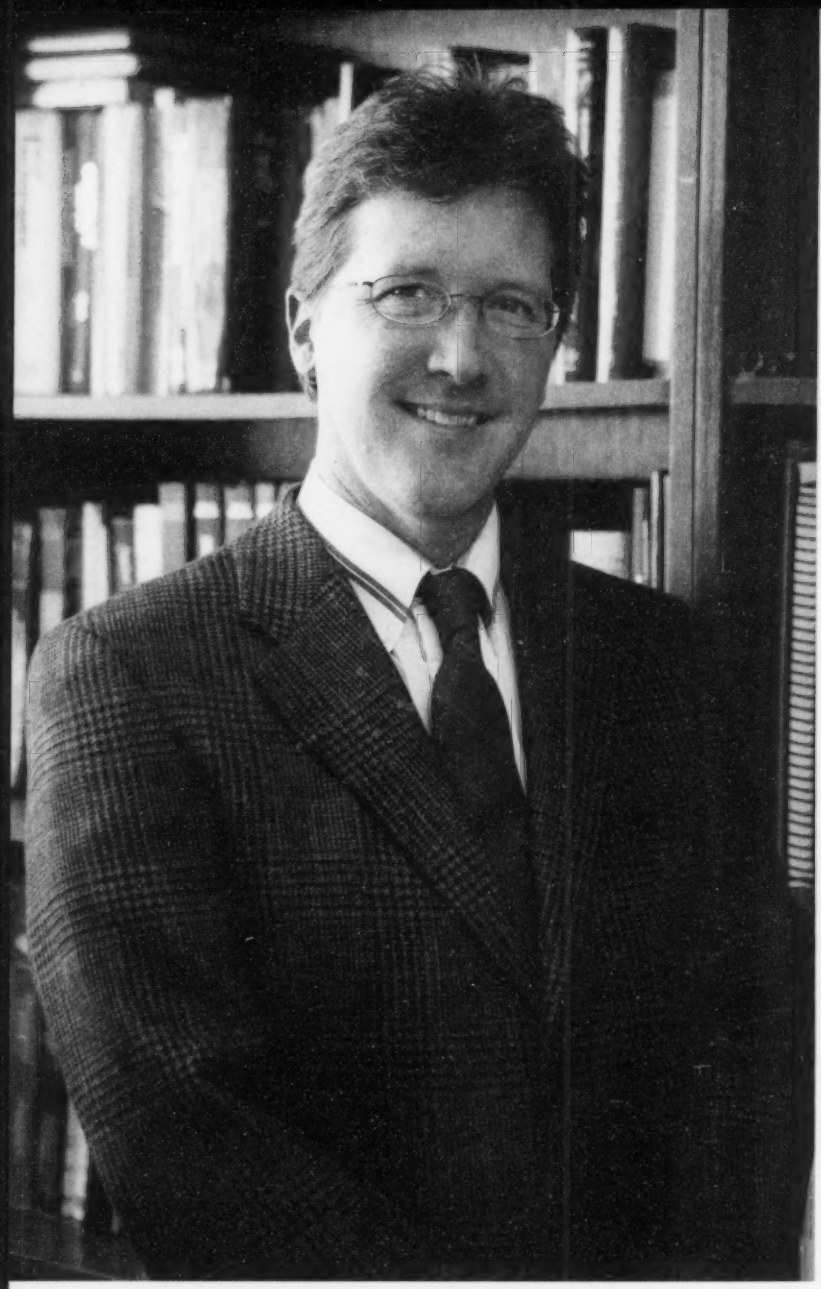


■ THE GRILL

Peter Sandborn

An **obsolescence expert** talks about **anticipating obsolescence, dealing with it** and **understanding** that it is part of **Microsoft's business plan.**

Dossier

Name: Peter Sandborn

Title: Associate professor of mechanical engineering

Organization: University of Maryland

Location: College Park, Md.

Favorite technology: "I have a 46-in. HDTV, which I love. I don't think there's any going back. If I was rescuing one thing before a fire, it probably would come before the pets!"

Greatest ambition: "I used to say it was to be called for goaltending in a basketball game. I'm only 5 feet 4 inches. It's really to think an original thought. I don't know how many people are really, truly able to do that in a lifetime."

Favorite nonwork pastime: "Managing my kids' science fair projects. And rebuilding the house."

Favorite vice: "Mountain Dew. I don't drink coffee, so I have to get my caffeine someplace."

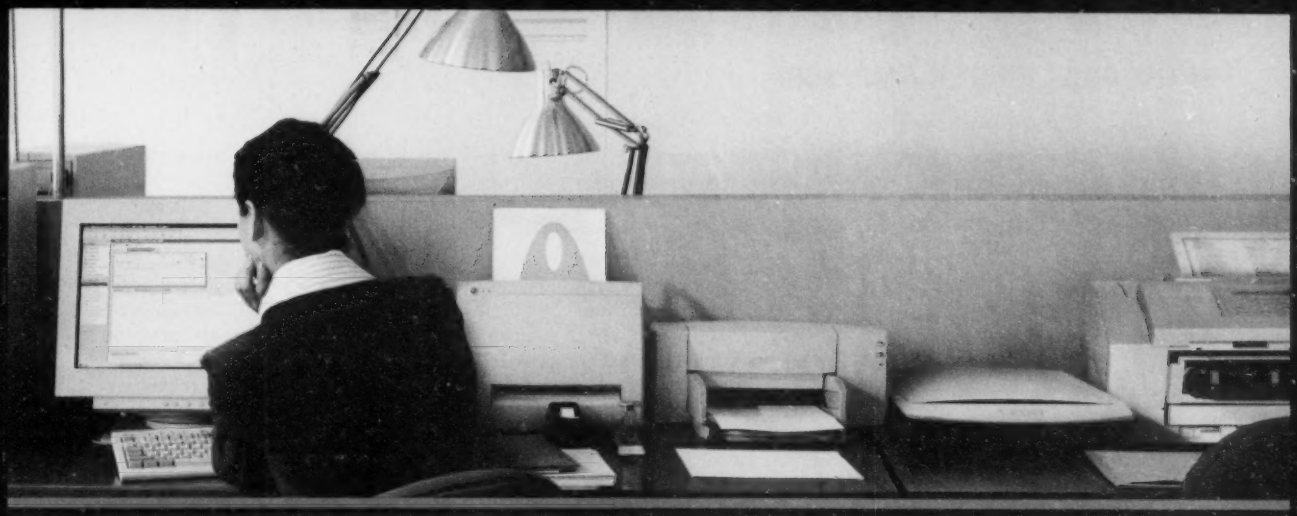
Peter Sandborn is an expert on parts obsolescence planning. He has created tools to help sustain the electronics embedded in safety-critical systems, such as aircraft avionics, to help ensure that they can operate for decades.

When it comes to obsolescence, what's worse, hardware or software? Software is worse. It's potentially a lot more expensive and a lot scarier.

How fast do products become obsolete today? Things like memory can become obsolete within nine or 10 months. People who depend on putting Dell laptops into larger critical systems are stuck with the same problem. The laptops they've bought are not supported for more than three years, and they may be putting them into a system that [must be] maintained for 25 years.

What industries are most affected? The root of the problem is in avionics. Medical diagnostic equipment

Continued on page 18



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“A lot of planned obsolescence is really a business plan to keep the level of need high enough that companies grow.

Continued from page 16

is another good example. They have to be sustained for 30 years, maybe more. You can't just change things in those systems without putting a lot of thought and work into it, because those are highly qualified and certified systems. These systems can have qualification processes that run tens of millions of dollars. It's very expensive to change anything.

What are the consequences of failing to plan for obsolescence? If you have to refresh the design of a system, you have to go back through some portion of the qualification. It can get quite expensive. I worked on a GPS radio for an Army helicopter, and if you changed the hardware such that it changed a single line of the software, it was an automatic requalification of the helicopter.

There also can be a cost in availability of the system. If you're flying airplanes in Iraq, you may have to retire a perfectly good aircraft so you can rob it for parts to keep the other ones going.

What's the alternative? If you forecast the lifetime of the parts early, you can strategically plan refreshes to deal with the problems and figure out what the optimum refresh frequency is.

Given all of the uncertainties, can you really predict that accurately? This is a decision-making-under-uncertainty problem. [The tool we developed] does simulations to handle all of the uncertainties: in the costs of resolving things, in the dates when something is expected to go obsolete, in how many spares you're going to need. It looks for a solution that is good in the context of all of the uncertainties.

How can IT organizations preserve their technology investments? Planning is king. You can certainly piggyback on the sort of mitigation approaches that people use for avionics, which work reasonably well in hardware situations. Either you're going to have to find an aftermarket supply chain or make lifetime buys and keep the replacements in inventory. For a small volume of things, you can make final orders and store parts.

The other thing people can do is try to consolidate demand and inventory. When a part goes obsolete, I'm not the only person who needs it. What people find is that I need a couple of them, the guy in the next building needs a couple of them, and there's a guy in a branch in Germany that has 10 that I never knew existed. There are parts out there, if you can just link up the people.

How have regulations, such as the EU ban on the use of lead solder, exacerbated the obsolescence problem? The EU ban is called RoHS, Restrictions on Hazardous Substances. You can't have lead in solder anymore. It has made the entire supply chain move to lead-free parts. In one fell swoop, you made obsolete all tin lead solder parts, and now you're stuck.

A lot of systems that IT folks have use tin solder parts. If you need to fix one of those boards, you may have to use a lead-free part. Now you're assembling a lead-free solder part onto a tin lead soldered board, and people question the reliability of that.

Then you have the tin whiskers that can grow and wipe systems out.

Tin whiskers? Yes. Traditional solder is lead and tin. When you add lead to tin, it [grows] these single crystal whiskers over time. They can be millimeters long, and they'll short things out. A couple of satellites have been lost due to tin whiskers. It's hard to understand how to stop it. It's just an example of the kind of problems you get into.

Is some of this obsolescence in the IT market planned? We're all trapped in this problem of "I have Office 2005, and I'm fine with Office 2005. It does more stuff than I'm ever going to use." But darned if documents don't start showing up that I can't open in Office 2005 because someone made them in Office 2007. Pretty soon, I get fed up with this and I'm forced to upgrade. I'm stuck in this cycle of needing to upgrade because the world pushes on and pretty soon I can't function, even though I don't need the new stuff. We've called this the Microsoft business plan.

If this wasn't happening, how would Microsoft stay in business? Their whole stock value is predicated on the idea that everybody needs a machine upgrade and a software upgrade at some average frequency. If they didn't, Microsoft couldn't grow, let alone stay the same size.

A lot of planned obsolescence is really a business plan to keep the level of need high enough that companies grow. They're strategizing on "How do we force people to continue to upgrade their version?" And they're good at it.

— *Interview by* **Robert L. Mitchell**

■ OPINION

Michael Gartenberg

Why the iPhone Is Apple's Trojan Horse

APPLE'S NEW iPhone 3G arrived a few weeks ago. Did you miss the news? Not likely. It was everywhere. There were rave reviews about the new hardware and features, all delivered at a much lower price than the original iPhone (see related story, page 12).

The more interesting news for enterprises, though, involves the new iPhone and iPod Touch 2.0 software that comes installed on the 3G phone and is also available for the first-generation devices. That's because the iPhone is a now a bona fide software platform.

That's good for Apple; everyone wants to be a platform. It's a powerful way to generate revenue. But it's good for you, too, because it means the iPhone is positioned to be a more enterprise-friendly device. You need it to be enterprise-friendly because, like it or not, it's already a business device. Any technology your CEO wants to use is a de facto business device, and the iPhone has been very attractive to a lot of CEOs.

All device vendors have to overcome a hurdle — a sort of natural catch-22 — to make their products into platforms. Developers won't bother with a device until it has a solid base, something north of a million units. And vendors usually can't get to that level very easily without third-party applications to back up their own software offerings. Apple broke this logjam by producing a device that was different, and sexy, enough to make millions of people want to buy it, even without the promise of much third-party gear to add on.

One of the most important things that will make it much easier for Apple to get the iPhone into business users' hands is support for Exchange. I had no problems syncing my Exchange data to the iPhone. A lot of folks are dependent on Exchange, so this new ability has made the iPhone a first-class corporate citizen.

Apple also released tools to let IT managers remotely configure and control iPhones on their networks. In combination with Exchange syncing, that should allow Apple to make new inroads into the enterprise, with the iPhone acting as a Trojan horse for other Apple devices and services. IT departments of the world, you have been warned: Beware of geeks bearing gifts.

■ IT departments, you have been warned: Beware of geeks bearing gifts.

Another important development is the App Store. It's this store that heralds the arrival of the iPhone platform and all that that means — namely, thousands of developers to work on applications, and a large influx of venture capital to fund the ecosystem.

Eventually, developers will greatly add to what the iPhone can do in ways that will attract both consumers and business users. There are already some interesting applications in the store, and I'm sure things will only heat up as developers really start to learn how to get the most from the platform. And who knows how corporate developers will take to the platform for line-of-business applications?

By the way, if you really didn't see any of those iPhone 3G reviews, I can tell you that it's still a handsome device with good hand feel, despite the replacement of the metal backing with plastic. The 3G speed is impressive, and GPS has worked well for me in northern New Jersey. Sound is excellent, a notable improvement over the first generation.

Battery life remains far from stellar. But that's the thing about smart phones: We love to have them loaded with features, but those features severely cut into battery life. A removable battery would be nice, but I've learned to live with sealed batteries after years of iPod use. I'd like more Bluetooth profiles, but for most people, Bluetooth is just for hands-free use.

Then there's the lack of cut-and-paste. How hard could it be, Apple? (Well, actually, it took Microsoft three generations to get it into its smart-phone version of Windows Mobile.) ■

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GOOGLE DATA

BY THOMAS HOFFMAN

Cloud computing is changing the way we think of the IT department.

JONATHAN SNYDER'S five-person team at Dreambuilder Investments LLC isn't your typical IT organization. Or is it?

The New York-based company, which buys and sells defaulted residential mortgages, uses Salesforce.com Inc.'s Force.com as its financial services platform. It backs up data using EMC Corp.'s hosted MozyPro service. Dreambuilder's server is hosted by RackForce Networks Inc. in Canada, and its e-mail is handled by Apptix Inc., a hosted exchange in Herndon, Va.

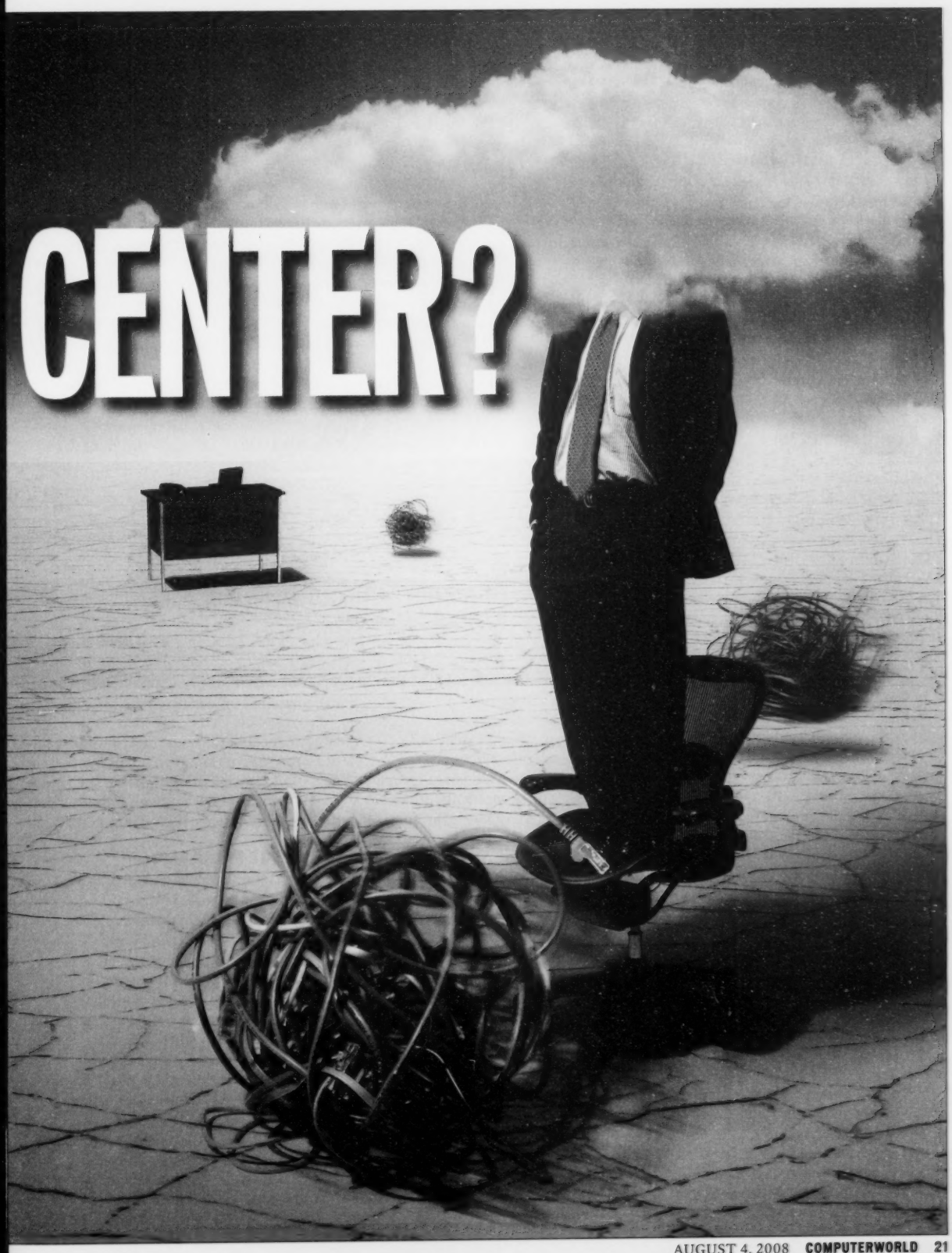
Granted, Dreambuilder Investments is a five-year-old company that lacks the IT infrastructure that a typical Fortune 1,000 enterprise has built up over decades. But as Chief Technology Officer Jonathan Snyder sees it, his firm's core business is mortgages, not server maintenance and disk backups. "If it's somebody else's core business to handle an Exchange server, let them do that," he says.

It's not just small to midsize businesses that are following Snyder's lead. By 2013, at least one-fifth of enterprise IT workloads will be managed in cloud computing environments, according to Mike West, an analyst at Saugatuck Technology Inc., a boutique consulting firm in Westport, Conn. He says that big companies are increasingly handing over their IT infrastructure activities to traditional IT services providers such as IBM, Hewlett-Packard Co. and even recent market entrants like Amazon.com Inc. and Boomi Inc. The goal is to lower their costs, access enhanced functionality, sidestep skilled-labor shortages and reduce their data center footprints.

Moreover, building or installing commoditized applications or IT infrastructure services that don't provide competitive advantage has produced diminishing returns over the past few years, says John Dutra, CTO at

Continued on page 22

> If it's somebody else's core business to handle an Exchange server, let them do that.
>
> CTO, DREAMBUILDER INVESTMENTS LLC



STEPHEN WEBSTER

Careers in the Cloud

IT organizations that shift a good part of their IT infrastructure activities to hosted service providers over the next decade will likely see profound changes in the makeup and skills of their remaining IT staffers.

"There's a limited number of resources in IT," notes John Dutra, CTO of Sun IT, a division of Sun Microsystems. "Wouldn't I want to focus them on the most strategic areas possible?"

On the path toward utility computing, IT leaders will need to develop and attract people with transitional skills. For instance, companies that aggressively pursue hosted IT services may wind up creating software-as-a-service task forces to devise new ways of providing support to business users, says Mike West, an analyst at Saugatuck Technology. And as companies cobble together a mix of premises-based and hosted applications, systems integration expertise will come to the fore, whether provided by internal staffs or outsourcing providers, West adds.

Nevertheless, large companies will still need to have IT organizations that are "very deep in the business – people who have vendor relationship management skills, who can help the [managed service provider] or outsourcer to understand how to facilitate the business," says Robert Keefe, CIO at Mueller Water Products. To play that role, IT staffers will have to improve their vendor negotiation skills, says Roni Krisavage, CIO at World Wrestling Entertainment Inc.

Even companies that outsource the bulk of their IT infrastructure support will still need in-house technical experts who understand how everything fits together and works, says Beach Clark, CIO at the Georgia Aquarium.

And since most hosted services will be accessed using Web browsers such as Internet Explorer, Firefox and Safari, "somebody in the [customer] company will have to deal with that in a technical fashion," says Dutra.

Once the transition is well under way, expect to see an increase in the number of people with vendor relationship management skills, says Paul Major, managing director of IT at Aspen Skiing Co. But the people who end up filling those posts might be "superusers" and not traditional IT staffers, he adds.

Major also says many IT pros with deep technical skills in areas such as network management will probably end up working in giant hosted data centers.

Futurist Thornton May agrees. "I think the human capital flow is going to change" over the next decade, he says.

He predicts that many young IT workers will spend the first 10 years of their careers working for managed services providers and then move into middle and senior management positions in corporate IT. "You're basically going to get your technology chops inside the belly of the outsourcing beast," May says. "And some subset of these people will migrate over to their customers."

– THOMAS HOFFMAN

Continued from page 20

Sun IT, a division of Sun Microsystems Inc. that's preparing to launch a hosted computing platform for developers called Network.com.

Companies "are no longer going to buy technology artifacts, like ERP systems," predicts Thornton May, a Biddeford, Maine-based futurist and *Computerworld* columnist. Instead, he says, "they'll commit to a service."

Cloud computing — the ability to store files and data on a remote network using the Internet (see QuickStudy, page 25) — provides benefits such as lowered infrastructure costs and enhanced speed to market. Studies have shown that it would cost some companies millions of dollars to set up their own virtualized server and storage environments, says West.

With hosted IT services, West says, "you don't have to buy the hardware and software; you just subscribe. There's not a lot of capital outlay. The attraction to that is huge."

Moreover, hosted services providers such as Google Inc. and Amazon are making pricing transparent. Google Apps (which includes e-mail, word processing, spreadsheets, presentations and calendaring) is priced at $50 per user per year, says Matthew Glotzbach, Google's director of product management. Amazon says its Simple Storage Service (S3) is priced at 15 cents per gigabyte each month.

> The choices we have about what we do in-house and what we can have outsourced continue to improve.
> CIO, GEORGIA AQUARIUM

"We've removed so much of the friction by being transparent about prices and not having to have lengthy contracts and negotiations," says Adam Selipsky, vice president of product management and developer relations at Amazon Web Services in Seattle.

Although the bulk of Amazon Web Services' customers are small firms, it has also signed up big players such as The Nasdaq Stock Market LLC and *The New York Times*, says Selipsky. In fact, he says that adoption among enterprise customers has happened "a little quicker than we would have imagined."

"The choices we have about what we do in-house and what we can have outsourced continue to improve," says Beach Clark, CIO at Georgia Aquarium Inc., whose Web farm is hosted off-site by a third party. But Clark says he believes that IT activities that are core to the mission of a business will continue to be handled internally.

For instance, Clark's five-person staff handles most of the aquarium's online ticketing support and much of its business intelligence work — functions he deems critical — even though some of the programming itself is outsourced.

CHANCE OF PROBLEMS

The shift among enterprise IT organizations toward hosted infrastructure services is real, says Paul Major, managing director of IT at Aspen Skiing Co.

But even though he finds the prospect of outsourcing IT infrastructure support to third parties "appealing," Major raises one of the red flags that have played a role in curbing widespread adoption among big companies.

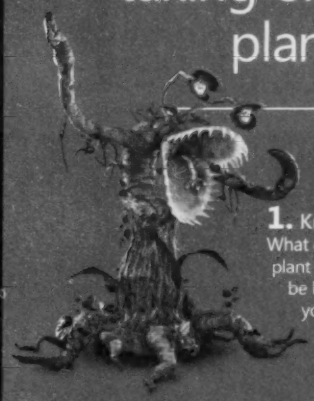
"My concern is what happens if [the service provider's] business model flops and someone comes in and buys them," says Major. "How do I go back in and get my data and format it? I'd rather keep it local and keep it under control."

For that reason and others, Storage

Continued on page 24

Microsoft

taking on man-eating plants. easy.



1. Know your leafy enemy.
What changed your dusty, dried-out office plant into a bloodthirsty menace? Will you be held responsible for the workloads of your devoured coworkers?

2. Office coffee.
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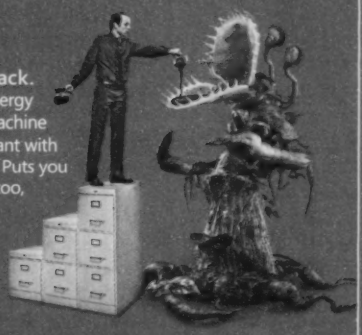
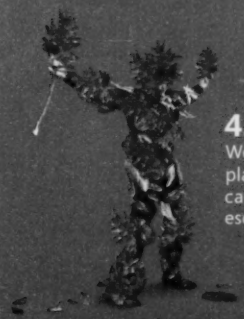
In the afternoon, when energy is low, raid the vending machine and fill the Man-Eating Plant with snacks, chips, cookies, etc. Puts you right to sleep—the Plant too, we bet.





4. Go green.
We mean literally. Disguise yourself as a plant—a leafy fern, perhaps—to escape carnivorous Plant scrutiny. Helps you escape boss scrutiny as well.

5. Weed spray.
This is generally nasty stuff, but there are plenty of organic weed sprays on the market. And this is a Man-Eating Plant, so it seems justified.

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Continued from page 22

Networking Industry Association Chairman Vincent Franceschini believes there will be "many shades of gray" when it comes to adoption of hosted IT infrastructure services among Fortune 2,000 organizations.

For instance, the chemical and avionics industries have vastly different business processes and data workflows. But at the core of both is intellectual property that companies "very much want to be controlling," says Franceschini. So while companies may outsource some level of rote IT infrastructure activities to third parties, he says that "it will take some time" for core business applications — particularly those containing IP — to move off-premises.

If anything is going to cause a slowdown in managed services adoption by enterprise customers, it's concern about data protection, says Nick Sharma, senior vice president of infrastructure managed services at Satyam Computer Services Ltd.

There are other reasons that many CIOs are still resisting the hosted IT services model. "I think there's going to be a swing back to a more traditional [on-premises IT support] model because IT departments are understanding that users want to interface with a real human being in English," says Carmen Malangone, director of IT at Coty Inc., a maker of fragrance and beauty products. "That's one area where these [managed] services fall short," he says, alluding to the use of offshore service reps whose English language skills may be spotty.

And those aren't the only inhibitors to widespread adoption. "One of the biggest barriers is the IT organization itself," says Sun's Dutra. "There is a cultural history of building things." There's also a bias among some business customers that have become accustomed to having their IT organizations own and operate systems, he adds.

"There are different degrees of progression down this [hosted services] path," says Bryan Doerr, CTO at Savvis Inc., a St. Louis-based IT infrastructure services provider. "There's a percentage of companies that don't think a virtualized solution is for them."

Even for IT organizations that do shift work to third-party providers in coming years, certain activities will remain in-house, including data management and business intelligence functions, says May.

Moreover, says Robert Keefe, CIO at Mueller Water Products Inc. in Atlanta, "you're always going to have some things [in IT] that need to be looked after — nuances and pieces of technology that continue to change."

For example, IT organizations are likely to retain project portfolio management, says Chris Barbin, co-founder and CEO of Appirio Inc., a San Mateo, Calif.-based provider of products and services for hosted environments such as Salesforce.com and Google Enterprise. That means they will still need people who are adept at sourcing and staffing project teams.

"For me, it's my revenue-generating and customer-facing systems" that will remain in-house, says Major.

He cites a few reasons for this, including a dearth of vendors that provide hosted application services for those particular disciplines. Even when players do emerge in those areas, says Major, "they're going to have to come to me and explain why this is a great idea for me."

So while more and more enterprises are looking upward, most will probably test hosted services before losing themselves in the cloud.

"I don't think the on-premises [software] business is going away overnight; I don't think it's ever going away," says Google's Glotzbach. "If we've learned anything in IT over the past 20 years, it's that nothing ever goes away completely." ■

CLOUDY FUTURE

As a greater proportion of IT activities is handled externally, CIOs will see their roles continue to morph, though exactly how is uncertain.

"I think the technical CIOs are going to migrate over to these hosted companies," while CIOs who are more business-focused will continue to work alongside their business peers within customer companies, says Robert Keefe, president of the Society for Information Management and CIO at Mueller Water Products.

Carmen Malangone, director of IT at Coty, foresees more dramatic changes ahead for IT leaders.

"What I think you'll see is the CIO role dissolving," while IT directors increasingly work one-on-one with divisional business leaders, he says.

If he's right, that kind of change will likely take years to play out.

– THOMAS HOFFMAN

Roundup of Hosted Services

Here's a look at some of the types of hosted IT infrastructure services that are currently offered:

■ **Data center/server management: Interest among enterprise customers in virtual server farms is beginning to take off. Multiple vendors, including IBM, Satyam and Amazon already offer such services. These are particularly appealing to organizations trying to avoid adding to their data center footprints.**

■ **Application management: Already, customers can use enterprise "mashups" or applications that combine data from two or more sources (i.e., a Google Map and an Excel spreadsheet that ties into an ERP system). But business partners that are "tenants" with the same SaaS provider can also share customer data, sales leads and other information.**

■ **Systems integration: Until recently, systems integration had been a sticking point for organizations that have tried to mesh data from their hosted and premises-based applications. Now, companies such as Boomi offer integration-on-demand services that allow customers to build, deploy and manage application integration using Web browsers. Boomi customers that want to integrate their Salesforce.com data with Oracle Financials pay a standard rate of $135 a month, regardless of the number of users.**

■ **Storage management: EMC's Cloud Infrastructure and Services division offers subscription-level storage services to enterprise customers, including backup as a service, which supports both PC and Macintosh clients.**

– THOMAS HOFFMAN

Cloud Computing

Users can hook into the power of 'out there.'

BY RUSSELL KAY

ASK ANY five IT specialists what cloud computing is, and you're likely to get five different answers. That's partly because cloud computing is merely the latest, broadest development in a trend that's been growing for years.

Cloud computing is the most recent successor to grid computing, utility computing, virtualization and clustering. Cloud computing overlaps those concepts but has its own meaning: the ability to connect to software and data on the Internet (the cloud) instead of on your hard drive or local network.

To do anything with a PC 10 years ago, you needed to buy and install software. Now, cloud computing allows users to access programs and resources across the Internet as if they were on their own machines.

IN THE BEGINNING

First, there were mainframe computers, then minicomputers, PCs and servers. As computers became physically smaller and resources more distributed, problems sometimes arose when users needed more computing power.

IT pros tried *clustering* computers, allowing them to talk with one another and balance computing loads. Users didn't care which CPU ran their program, and cluster software managed everything. But clustering proved to be difficult and expensive.

In the early 1990s, the *grid* concept emerged: Users could connect to a network, much as they plugged into the electrical power grid, and use service on a metered-utility basis. Thus, people began speaking of *utility computing*.

One problem was where data was stored. Grid nodes could be located anywhere in the world, but there could be significant processing delays while data stored at other locations was transmitted.

Also, grid or cloud computing means users and businesses must migrate their applications and data to a third party or different platform. For enterprises with huge investments in existing software and operational procedures, this has been a real barrier to adoption of these shared technologies. Other significant concerns include data security and confidentiality.

Why a Cloud?

For years, in flow diagrams and PowerPoint presentations, people have represented the Internet as a fuzzy cloud with communications lines going in and out of it. Now that they're actually talking about using a remote, black-box approach to computing, the old familiar cloud seems an appropriate metaphor.

WHY IT WORKS

Critical to the success of cloud computing has been the growth of virtualization, allowing one computer to act as if it were another — or many others. Server virtualization lets clouds support more applications than traditional computing grids, hosting various kinds of middleware on virtual machines throughout the cloud.

WHERE IT'S GOING

If cloud computing succeeds on a wide scale, it may well be because of recent initiatives from Amazon, IBM and Google.

In 2007, IBM and Google Inc. teamed up to provide the hardware, software and services needed to teach computer science students large-scale distributed computing. Their Academic Cluster Computing Initiative began when a Google software engineer, Christophe Bisciglia, wanted to improve computer science curricula by teaching college students how to solve problems involving massive computer clusters and terabytes of data.

Google's CEO recruited his counterpart at IBM to join the initiative. The two companies say they will dedicate hundreds of computers to it. Located in data centers at Google, IBM's Almaden Research Center and the University of Washington, these resources are expected to eventually include more than 1,600 processors.

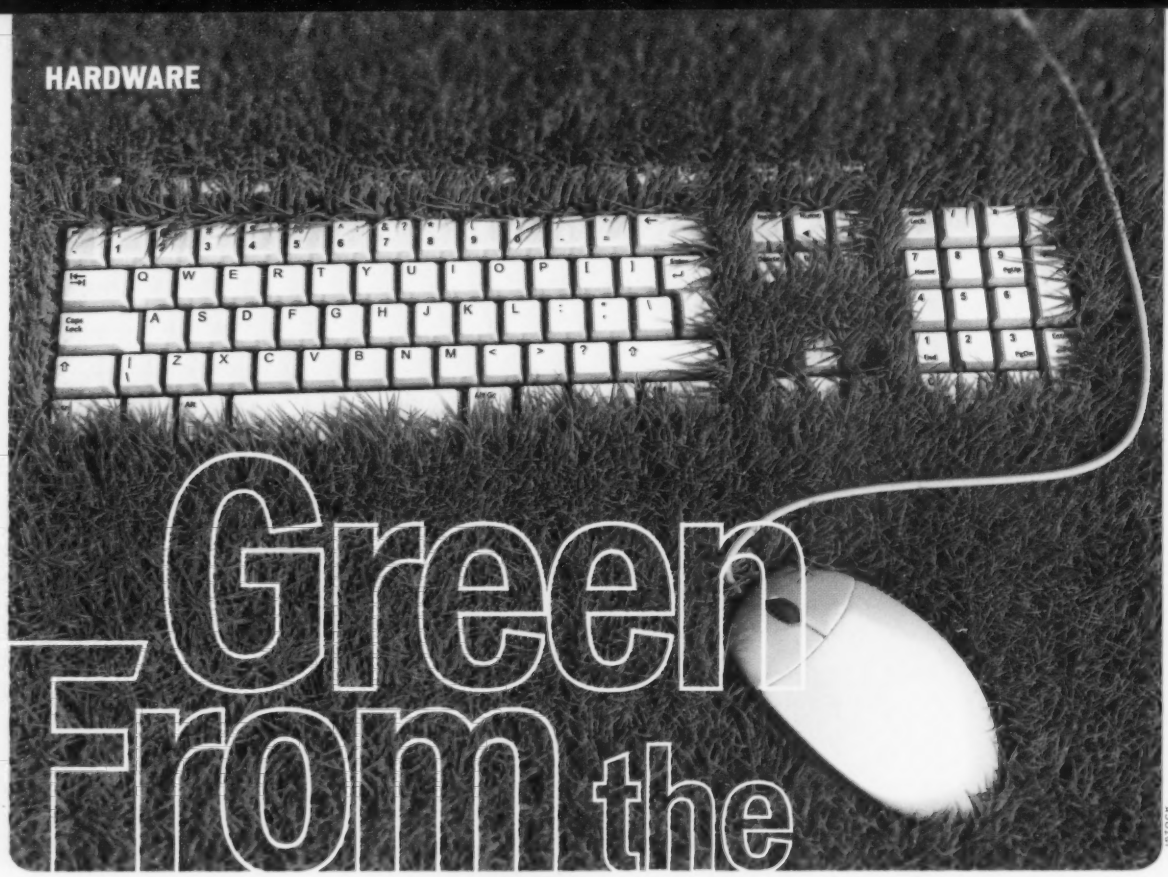
Initially, six universities — the University of Washington, Stanford University, Carnegie Mellon University, MIT, the University of Maryland and the University of California, Berkeley — are participating in the Google-IBM program.

Meanwhile, Amazon.com Inc. offers a couple of cloud services. Web service developers can use its Simple Storage Service (S3) to store any amount of data. And developers can use Amazon's Elastic Compute Cloud (EC2) to set up a virtual server in minutes, with none of the maintenance of buying and installing server hardware and software. Both services are offered on a pay-per-use basis. ■

Kay *is a* Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

Definition

CLOUD COMPUTING describes a system where users can connect to a vast network of computing resources, data and servers that reside somewhere "out there," usually on the Internet, rather than on a local machine or a LAN or in a data center. Cloud computing can give on-demand access to supercomputer-level power, even from a thin client or mobile device such as a smart phone or laptop.



Green From the Roots

Vendors start to design IT with Mother Earth in mind.

By Mary K. Pratt

HP saw potential in used water bottles.

Hewlett-Packard Co. found a way to turn those old bottles, along with other types of recyclable consumer plastics, into ink-jet printer cartridges. ■ In fact, HP turned more than 5 million pounds of recycled plastic into ink-jet cartridges in 2007 and plans to use twice as much this year. ■ The project, part of HP's Design for Environment program, is just one way for the company to meet its green objectives, says Pat Tiernan, vice president for social and environmental responsibility. ■ "More and more people are really thinking about the environment in ways they hadn't before," he says.

HP isn't the only technology company gambling on green. Many manufacturers are now giving heightened consideration to how their products affect the environment. As a result, they're building more products that require fewer resources to make and less power to run, contain less toxic material, and are a snap to refurbish or recycle.

"The vendors are paying a tremendous amount of attention to this," says Christopher Mines, an analyst at Forrester Research Inc. "The industry has made great strides, and certainly there are companies that take design for the environment to heart."

Tiernan points to the initiatives at HP to illustrate the point.

The company has a commitment to eliminating toxic polyvinyl chloride (PVC) and brominated flame retardant (BFR) from all of its products by the end of 2009. It has switched from solvent-based paints to more environmentally friendly water-based types for its workstations and TVs. And 20 months ago, it started to eliminate metals, many of which are neurotoxins, from its consumer desktops, removing enough so far to be able to construct the Eiffel Tower.

HP also incorporates power manage-

ment technology into its printers, something it has done since the 1990s with its Instant-on Technology, which shortens the time a printer takes to wake up from sleep mode, using up to 50% less energy than traditional technologies. And this year, it released HP Web Jetadmin, which is designed to allow IT workers to remotely schedule sleep/wake-up cycles and automatically turn off devices at night and on weekends.

The impact of those types of innovations can be significant: Over the past decade or so, HP's technologies have yielded energy savings that are about the same as the savings that would be generated by removing 1.1 million cars from the road for one year.

Tiernan acknowledges that some of HP's greener products have premium prices, but apparently companies are willing to pay them. He says customers often include questions about HP's environmental policies on their requests for proposals. In fact, the number of customers asking about green initiatives has grown by more than 150% in the past two years.

REPORT CARDS

Customers aren't the only ones taking notes. Greenpeace International has taken on this issue in its quarterly "Guide to Greener Electronics" report, which ranks consumer electronics companies based on their efforts to reduce toxins in their products, and on their programs for taking back and recycling products. The June 2008 report for the first time considered the manufacturers' efforts to increase their products' energy efficiency.

That report, issued June 25, lists Sony Ericsson and Sony Corp. as leaders among the 18 companies ranked. However, the report gave those two a score of just over 5 on a scale of 1 to 10. The majority of the ranked companies fell between 4 and 5.

Despite such mediocre marks, the industry has made strides to do better by the environment.

Casey Harrell, a toxics activist at Greenpeace, says many manufacturers have made their product lines more environmentally friendly in just the past few years.

"We have significantly greener mobile phones, laptops and PDAs than we had three or four years ago," he says. He credits such successes to technology advances, the development of alternative materials, legislative requirements and customer demands.

"Almost all [the manufacturers] are doing design for the environment to some extent, but there are companies that are certainly more progressive than others," says Kate Sinding, a senior attorney at the Natural Resources Defense Council in New York.

Fujitsu Computer Systems Corp. in Sunnyvale, Calif., is working on several fronts toward its goal of developing greener products.

One initiative is the four-year-old Super Green Products program, says Richard McCormack, the company's senior vice president of marketing. Products earn the Super Green designation if they're best in class in several areas: They must use less energy, avoid hazardous substances and incorporate the three R's — reduce, reuse, recycle — in their design and technology.

McCormack cites Fujitsu's Primergy TX120 server as an example. The server takes less space, consumes less energy, and produces less heat and noise than standard servers, yet it has the same memory and storage capacity as bigger models. It's also designed for easy disassembly and separation of materials that can then be reused in other products, he says. (The trade-off is that it has fewer optional components and more fixed ones, notes McCormack.)

Fujitsu has also developed biodegradable plastics that have less of an environmental impact than traditional plastics, which are harder to reuse than other components of electronic goods, McCormack says. The company has used biodegradables in certain notebook PCs since 2002. And in 2006, it developed a flexible bio-plastic using castor oil; that material is now used in PCs and cell phones.

TOXIC OUT; GREEN IN

Fujitsu's push for products that are environmentally sound from inception through disposal exemplifies the growing design-for-environment trend.

Harrell says he sees manufacturers phasing out a number of toxic chemicals, including lead, mercury and cadmium. Some are working to replace other toxins, such as PVC and BFR, with materials that so far have proved to be less dangerous.

However, he and others still see room for improvement.

A February 2008 Greenpeace report says the fate of up to 80% of e-waste in the U.S. is unknown, because much of it is still sent to landfills and incinerators or illegally exported for dumping in Africa or rudimentary recycling in Asia.

Harrell says manufacturers need to do more, too. For instance, Nintendo of America Inc. in Redmond, Wash.,

Get Started On Your IT Infrastructure

1. TAKE INVENTORY. "You'd be shocked at how much equipment you have turned on that's redundant," says Richard McCormack, senior vice president of marketing at Fujitsu Computer Systems.

2. ASSIGN AN EXECUTIVE to be responsible for proper disposal of e-waste, and budget for that task. "In a lot of enterprises, there's no one person responsible, and that's where the trouble begins," says Jim O'Grady, director for global asset management at HP Financial Services in Murray Hill, N.J.

3. BUY ENERGY STAR computers and servers to ensure you're getting the most energy-efficient equipment.

4. USE ENTERPRISEWIDE POWER-MANAGEMENT SOFTWARE for desktop computers, a move that the EPA estimates could save you $25 to $75 per PC annually.

5. DEPLOY COLLABORATION SOFTWARE AND WEBCONFERENCING AND SOCIAL COMPUTING TOOLS to reduce business travel requirements. Let employees work flexible schedules or work from home to further reduce carbon emissions caused by commuting.

– MARY K. PRATT

What's Driving Green IT?

Many factors are pushing manufacturers to develop green IT products. Here are a few of them:

■ INTERNATIONAL LAWS. Several laws now require manufacturers to take back their equipment and reduce the use of hazardous materials in their products, such as the European Union's Waste Electrical and Electronic Equipment (WEEE) directive and the Restriction of Hazardous Substances (RoHS) directive.

■ U.S. STATE AND MUNICIPAL REGULATIONS, California and New York City are among the places that require varying levels of electronics recycling and manufacturer take-back programs.

■ CORPORATE REQUIREMENTS. More companies now include green standards in their vendor RFPs and require manufacturers to take back products for recycling.

■ CONSUMER DEMAND. Individuals are increasingly incorporating environmental standards in their buying decisions, and the market is responding. For example, Wal-Mart Stores Inc. announced last year that it would evaluate consumer electronics suppliers in part on their products' environmental sustainability.

■ ELECTRICITY COSTS AND LIMITATIONS. As energy costs soar and the power grid grows more and more burdened, companies are looking for products that won't cost as much to run or require them to seek more power capacity.

– MARY K. PRATT

ranked at the very bottom of Greenpeace's electronics guide. Nintendo did not respond to requests for comment.

To be fair, Nintendo isn't the only company Greenpeace cited in a May report called "Playing Dirty," which examined the use of hazardous chemicals and materials in gaming console components. Greenpeace looked at Microsoft Corp.'s Xbox 360 Elite, the 40GB Sony PlayStation 3 and the Nintendo Wii. It didn't detect cadmium or mercury in any of those game systems' components, but it found lead and chromium at relatively low concentrations in some samples and PVC in a number of flexible materials (wire and cable coatings) in all of the consoles.

Microsoft, Nintendo and Sony have committed to making greener products. According to the Greenpeace report, Microsoft said it would stop using PVC and BFR in its hardware by 2010, Nintendo said it would eliminate PVC in its products but has not committed to a date, and Sony said it would phase out PVC and certain uses of BFR in its mobile products by 2010.

More Resources

■ CLIMATE SAVERS COMPUTING INITIATIVE: A nonprofit group of eco-conscious consumers, businesses and conservation organizations. www.climatesaverscomputing.org

■ ENERGY STAR: A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy to promote energy-efficient products and practices. www.energystar.gov

■ THE GREEN GRID: A global consortium dedicated to advancing energy efficiency in data centers and business computing systems. www.thegreengrid.org

■ THE ELECTRONIC INDUSTRY CITIZENSHIP COALITION (EICC): A group of companies that has developed a code of best practices adopted and implemented by some of the world's major electronics brands and their suppliers. www.eicc.info/index.html

CUSTOMERS ARE WATCHING

ChiYoung Oh, environmental products manager at Samsung Electronics Co. in Seoul, says that consumers expect top brands to have high environmental standards and that corporate customers want to know about green programs, even if contracts aren't won or lost because of them.

Samsung has a number of initiatives it can show to customers, Oh said in an e-mailed statement. In 2004, the company introduced a formal eco-design process that incorporates attention to resource efficiency, environmental hazards and energy efficiency. The process is linked to the company's quality certification process, which means environmental factors are considered part of product quality.

Samsung incorporates recycled materials in new products when possible and focuses on making products easier to recycle. It has simplified screws and fasteners to make products easier to break down into components, reduced the number of materials used in order to facilitate material separation, and ensured that plastics are marked in accordance with international standards to aid recycling.

Likewise, Sun Microsystems Inc. thinks about disassembly as it designs its products, making sure they come apart quickly and mostly without tools, according to Dermot Duggan, Sun's director of eco-innovation solutions. The company even moved ID stickers from plastic parts to sheet metal, because clean plastic is more valuable for recycling.

Such efforts make a difference, says Jake Player, president of TechTurn Inc., an Austin-based company that recycles and refurbishes technology equipment.

"We're seeing [manufacturers] work with us on how to make the computers easier to recycle," Player says.

For example, hard drives now snap out, and chassis snap apart. There's less use of metals and other components that can't easily be separated, and there's more compatibility of components across the manufacturers' own product lines.

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IS THAT KEYBOARD TOXIC?
Concerns about nanotechnology are rising. See **computerworld.com/more**.

Player says his company can refurbish and resell 80% of the 1 million assets it handles annually. Those include data center equipment, scanners, fax machines, phones, docking stations and computer speakers. The remaining materials can be recycled.

Today, says Player, "manufacturers are designing these products with [recyclers] in mind, whereas five years ago they weren't." ■

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

A Security Roundup In 20 Minutes Flat

Our manager has a chance to **make the case** for **better security** every quarter. But he has to be **fast.**

YOU'RE A security manager with 20 minutes to communicate to the CIO the precise state of your company's security posture. You need to demonstrate that things have improved, but you have to make it clear that things could be even better if you received more funding. The CIO and his staff are hearing from every functional unit under his control, and he'll be extracting key slides for when he goes on to make a similar presentation to the CEO.

How's that for pressure?

This is what happens every quarter in my company, and it's no exaggeration to say that those presentations constitute the most important 80 minutes of the year for me. I think of my 20 minutes each quarter as my opportunity to present our security State of the Union.

I divide my presentation into several sections. The first, a review of my role in the company, takes only a couple of minutes. It might seem like a waste of some of my precious 20-minute allotment, but from time to time, my role is modified, and I like to keep everyone up to date.

Next up are metrics, which are an effective means of communicating the level of information security we are achieving. When I tell the CIO and his staff the percentage of our Windows PCs and servers that are up-to-date with antivirus and security patches, they understand the implications. They know that there's a direct correlation between a low percentage of antivirus compliance and an increase in virus incidents. And having been through major outbreaks in the past, they share my desire to never go through that mess again.

They have a similar understanding when I tell them the percentage of our network that's being monitored by intrusion-detection software and data-loss prevention sensors, or when I tell them how closely we're maintaining our environment to a known baseline configuration.

■ Those four quarterly presentations constitute the most important 80 minutes of the year for me.

Another metric of great interest is the percentage of projects that gained my approval during the operational readiness phase rather than late in the project life cycle. That number has been rising, showing that IT is thinking of security in the early stages.

Then I turn to my group's highlights and lowlights. One highlight this quarter was certainly our success in data-loss prevention and how that translates to return on investment (all discussed in more detail in my July 21 column). But I also had successes in obtaining funding for a secure FTP project and in getting security embedded into the project life-cycle management process.

One lowlight was related to one of the highlights: It's difficult to properly operate the data-loss prevention infrastructure without additional head count. Another lowlight this quarter was a nudge directed at the CIO himself, as I communicated my frustration that some policies I had updated had yet to be ratified by him.

And then there's the budget, which is always a lowlight. Without proper funding, it's difficult to execute on previously established road maps, since I have to spend time and energy seeking commitments from other business units.

I conclude with a heads-up slide, which I also refer to as "Watch out, here it comes." This quarter, I revealed some of the findings from a recent security assessment we had done as part of an acquisition. Then I had to give everyone a heads-up about employees' increased use of mobile devices, particularly iPhones. Employees are discovering all sorts of new ways to connect these devices to our network.

My message: "Watch out, here comes a new policy." ■

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

Trouble Ticket

ISSUE: There's a limited window every quarter to communicate the company's security posture.

ACTION PLAN: Be organized, tout successes, and ask for money.

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JOIN IN

To join in the discussions about security, go to **computerworld.com/blogs/security**

■ OPINION

Paul Glen

Fostering Accountability

"HOW DO I make my people more accountable?" As a management consultant, I get this question all the time. In fact, I'd have to say that in general, making people more accountable is one of the top aspirations of technical managers. So it's worth answering the question here are simply as I can.

Here it goes: You can't make your people accountable. Get over it. It's that simple.

Here's what you can do:

- Threaten them.
- Bully them.
- Micromanage them.
- Beg them.
- Offer them incentives.
- Praise them.

But none of these things produces accountability. The list can go on and on, but it won't get you to accountability.

The problem is not that we managers lack the creativity and energy required to make people accountable. It's that accountability isn't something that managers can mandate. It's not something managers can enforce. It's something that subordinates feel. It's a mental and emotional state, not some condition that managers impose. There's no magical formula for making anyone feel this way.

So how does it happen? Real accountability occurs when employees believe these things:

- Their work matters.
- They have substantial control over their ability to succeed or fail.
- The quality and timeliness of the work is important.
- The rewards and consequences that result from their work are fair.
- They have reasonable influence on the evaluation of their work.

A manager's ability to make someone feel these things is extremely limited. But knowing that they can influence some feelings, managers sometimes try to enforce accountability by manipulating people's emotions. So how can you as a manager try to foster certain feelings in your subordinates? Here are some things you can do:

■ Employees must choose accountability. And you can't force them to do so.

- Try to make them frightened.
- Try to make them feel intimidated.
- Make them feel that you mistrust their abilities and/or motives.
- Encourage them to feel more powerful than you.
- Encourage them to be greedy.
- Try to make them feel loved and/or respected.

But none of these emotions engenders genuine accountability, and few of them would qualify as productive.

Employees must choose accountability. You can offer it, but they must decide whether to accept it. And you can't force them to do so. The best you can do is to try to create an environment that encourages them to make that choice. Here's how:

- Communicate the importance of work.
- Structure work to give people control over their own success.
- Recognize and reward outstanding work.
- Ensure that rewards and consequences are consistently and fairly meted out and are proportional to success or failure.
- Take reasonable extenuating circumstances into account.
- Structure work in such a way that people owe things to one another rather to the supervisor.

But again, you can only encourage them to choose accountability; you can't mandate that choice.

Even now, I can hear your protest: "I can discipline people if they screw up." True, but even if done well, discipline is only one means of engendering accountability. It's not the whole enchilada. More important, an employee who really feels accountable punishes herself for a failure more than you can punish her. Trying to make geeks feel things tends to be counterproductive. We don't like to be manipulated.

So give up on that dream of making people accountable, and start thinking about how you can make accountability a compelling offer. An invitation is the best you're going to be able to muster. Make it enticing. ■

Paul Glen *is the founder of the GeekLeaders.com Web community and author of the award-winning book* Leading Geeks: How to Manage and Lead People Who Deliver Technology *(Jossey-Bass, 2003). Contact him at info@paulglen.com.*

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Career Watch

19% Percentage of IT workers responding to a recent survey who said that their bosses expect them to work or at least check voice mail and/or e-mail while on vacation. In comparison, just 9% of all respondents said that their bosses have similar expectations. IT was the occupation most likely to be required to keep in touch.

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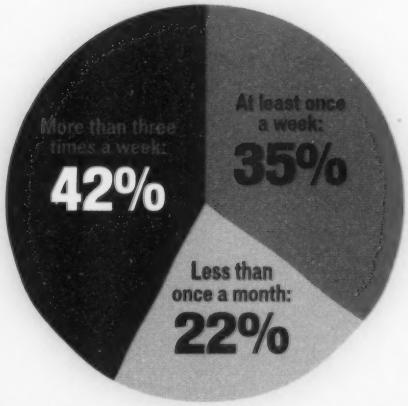
IT professionals have become extremely active on social networking sites such as LinkedIn, Facebook and Xing.

How often do you visit social networking sites?



Note: Percentages do not total 100 because of rounding.

SOURCE: SURVEY OF 430 FORTUNE 1,000 IT PROFESSIONALS BY OUTSOURCING FIRM SYNTEL INC., APRIL 2008

PAGE COMPILED BY JAMIE ECKLE.

The 'It's All About Me' Syndrome

By Thomas Hoffman

FIVE YEARS AGO, Jean Ritala had never heard the term *narcissism*. Then someone described her as having been "stung by a narcissist" and shared books and Web sites with her on the topic. Now, besides being the IT support services manager at Mystic Lake Casino Hotel in Prior Lake, Minn., Ritala educates and coaches others on how to deal with narcissists.

Narcissists show a pervasive need for attention and admiration and a lack of concern for others. But are they dangerous in the workplace?

"The cost to organizations from narcissism in the workplace is staggering," as the narcissist's co-workers become ill with stress, teamwork deteriorates, projects fail and turnover rises, says Ritala.

"Up to one-third of a narcissist's victims in the workplace will quit the company or transfer to another department if nothing is done" to address the behavior, she says.

Once she had become educated on the topic of narcissism, Ritala began to recognize narcissistic traits in the workplace. Feeling that it is a problem that is pervasive but too often ignored, she and management consultant Gerald Falkowski wrote a booklet on the topic, called *Narcissism in the Workplace* (Red Swan Publishing USA, 2007).

Ritala, former president of the IT Service Management Forum - U.S., spoke recently with *Computerworld* about dealing with narcissism in IT organizations.

Is narcissism prevalent within IT organizations? I think IT is more competitive than some parts of the business, so yes. But people are getting educated. Five years ago, few people knew about narcissism. Now there are online discussion groups which deal with the topic. And the dynamics of the workforce have changed so that narcissist personalities are standing out more.

What steps can IT managers take to address these issues? You need a health care professional, like a psychologist who specializes in employee counseling services, to get involved. Managers need to document behaviors and not be afraid to go to HR and say, "This is what I'm seeing and what people are telling me."

Once narcissistic employees are identified, how do you deal with them? HR should encourage them to use an employee-referral service such as counseling. Some narcissists, when confronted, can see how their behavior is impacting staff and their own performance. If they can't, HR has to calmly play back what they did. And you must establish firm boundaries, with timely, progressive consequences. You need to follow up to see if behaviors are improving or getting worse. But people's behavior patterns typically don't change unless they get help or become enlightened. And once a narcissist's behaviors are observed and documented, they can become even more cruel and offensive, since they no longer can hide their behaviors and rationalize them away.

Traits of the Narcissist

Some of the characteristics that identify narcissists:

- They are successful and goal-oriented but show no empathy or concern for others.
- They are charismatic, well spoken and funny.
- They disrespect boundaries and others' privacy.
- They patronize and criticize others.
- They can be cruel and abusive toward peers, but charming in front of their managers.
- They expect special treatment and privileges.
- They are manipulative and pit co-workers against one another.
- They abhor criticism or disagreement.
- They are anxious or paranoid, reacting with rage when they can't control a situation or their behaviors are exposed.

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SharkTank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

It's Academic!

Computer engineering department at this big university gets funding for a new building, and one faculty member decides that his grad students can lay out the server room better than the department's IT people. When the students are done, faculty guy gives this IT pilot fish a tour. Fish looks at the racks, which are one foot from the wall, and asks how admins will maneuver behind them to plug power and network cables into the servers. Faculty guy stammers for a moment, then says they'll just mount the servers face-in. Then fish asks how the admins will access the fronts of the servers, and how they're going to handle the airflow problem. "Faculty member said, as he stormed out of the room, 'If you know so much, then you fix it,'" says fish. "Department chair told me to make fixing the room a top priority."

Aha!

Flash back to the mid-1980s, when this finance company's installation of more than 80 refrigerator-size tape drives has gone nuts. "Inexplicable errors occur each week, always sometime between midmorning and 1 p.m., affecting multiple drives and abnormally terminating massive, long-running jobs," says a pilot fish there. "Both the company and equipment vendor spent huge sums of money trying to fix the problem, with no success. After three months with no answers, the account engineer one day noticed a bright spot of light playing across the front of the tape drives. The light beam was coming from the building across the street, one floor above him. Turns out a computer operator fired four months before was now working across the street. She periodically went into the restroom, opened a window and used a small mirror to reflect a narrow beam of sunlight across the tape drives, which totally messed up the drives' fiber optics. She didn't work there much longer."

Feeling Secure?

Pilot fish keeps his money in a small bank that merges with a slightly larger one, and he's notified that he'll have to visit the bank in person to activate his new online account. When he does so, a teller explains that he needs a new password and quickly jots something down on a scrap of paper, which she hands to him. What's this? fish asks. "Your new password," teller says. Stunned fish asks if she really knows everyone's password. "Oh, they're all the same," she says. You're kidding, right? gulps fish. "It's OK," she tells him, "you can change it to whatever you like." Says appalled fish, "I rushed home, changed my password – and then went back out to open an account with a different bank."

■ *Deposit your true tale of IT life with me at sharky@computerworld.com. You'll score a sharp Shark shirt if I use it.*

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■ COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at computerworld.com

Alcatel-Lucent 8
Amazon.com Inc. 20, 24, 25
Appirio Inc. 24
Apple Inc. 11, 12
Apptix Inc. 20
Aspen Skiing Co. 22
Atempo Inc. 11
Bar-S Foods Co. 10
Boomi Inc. 20, 24
CA Inc. 11
Carbon Disclosure Project 14
CareerBuilder LLC 32
Carnegie Mellon University 25
Chicago Mercantile Exchange 6
Cisco Systems Inc. 4
Climate Savers Computing Initiative 28
CME Group Inc. 6
CommVault Systems Inc. 10
Coty Inc. 24
Dell Inc. 16
District of Columbia 12
Dreambuilder Investments LLC 20
eBay Inc. 14
Electronic Data Systems Corp. 8
EMC Corp. 11, 20, 24
Enterprise Strategy Group Inc. 10
Facebook Inc. 32
Forrester Research Inc. 6, 26
Fujitsu Computer Systems Corp. 27
Gabriel Consulting Group Inc. 6
Gartner Inc. 10
GeekLeaders.com 30
Georgia Aquarium Inc. 22
Google Inc. 22, 24, 25
GreenIT Inc. 14
Greenpeace International 27
Handango Inc. 12
Hewlett-Packard Co. 6, 8, 20, 26, 27
IBM 6, 14, 20, 24, 25
Ilog SA 6
Intel Corp. 11
Internet Archive 8
Internet Systems Consortium Inc. 4
Intrepidus Group Inc. 14
IT Service Management Forum - U.S. 32
Lifetime Products Inc. 12
LinkedIn Corp. 32
Macronix International Co. 8
McAfee Inc. 6
Microsoft Corp. 2, 4, 6, 11, 12, 16, 28
MIT 25
Mueller Water Products Inc. 22, 24
Mystic Lake Casino Hotel 32
National Aeronautics and Space Administration 8
Natural Resources Defense Council 27
Networking Industry Association 22, 24
New York Stock Exchange Inc. 6
Newell Rubbermaid Inc. 11
Nintendo of America Inc. 27, 28
Novell Inc. 4, 11
NYSE Euronext Inc. 6
Ohio State University 11
Oracle Corp. 8, 24
PayPal Inc. 14
Platte River Associates Inc. 2
Powerchip Semiconductor Corp. 8
RackForce Networks Inc. 20
Reconnex Inc. 6
Red Hat Inc. 4, 11
Repsol YPF 2
Research In Motion Ltd. 12
Salesforce.com Inc. 20, 24
Samsung Electronics Co. 28
Satyam Computer Services Ltd. 24
Saugatuck Technology Inc. 20, 22
Savvis Inc. 24
Society for Information Management 24
Sony Corp. 27
Sony Ericsson Mobile Communications AB 27
Spectra Logic Corp. 11
Stanford University 25
Storage Networking Industry Association 22, 24
Sun Microsystems Inc. 4, 6, 20, 22, 28
Sybase Inc. 4
Symantec Corp. 11
Syntel Inc. 32
The Chicago Board of Trade 6
The Electronic Industry Citizenship Coalition 28
The Green Grid 28
The Nasdaq Stock Market Inc. 22
The New York Times Co. 22
U.S. Department of Agriculture 36
U.S. Department of Commerce 36
U.S. Department of Energy 28
U.S. Department of State 36
U.S. Department of Veterans Affairs 36
U.S. Environmental Protection Agency 27, 28
U.S. Government Accountability Office 4, 36
U.S. Securities and Exchange Commission 8
University of California-Berkeley 25
University of Maryland 25
University of Washington 25
Wal-Mart Stores Inc. 28
White House Office of Management and Budget 4
World Wrestling Entertainment Inc. 22
Xing AG 32

Business Objects ..... 15 *
www.businessobjects.com/workless
CDW Corporation 7
CDW.com
Citrix Systems 9
gotoassist.com/computer
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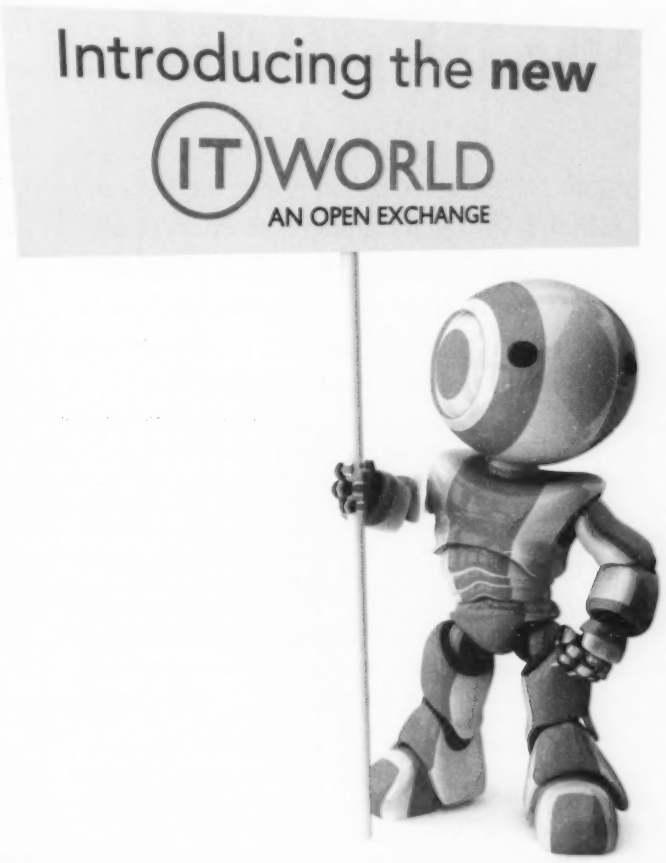

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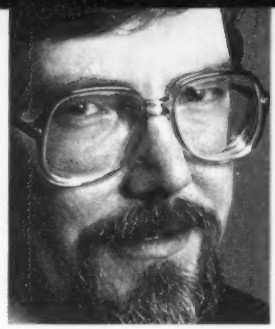
■ FRANKLY SPEAKING

Frank Hayes

Cryptic Reading



ENCRYPTION IS HARD. Case in point: the U.S. government, which requires its agencies to encrypt all sensitive data on laptops and mobile devices. But according to the Government Accountability Office, as of last year, 70% of such devices didn't encrypt — and the other 30% weren't in great shape either (see story, page 4).

The GAO just released a report that audited 24 agencies and departments for their mobile encryption implementations. It included trouble spots like the Department of Veterans Affairs, which in 2006 lost a laptop containing the personal information of 26 million vets and military personnel, and the Commerce Department, which has lost more than 1,000 laptops since 2001.

You already know the headline conclusion: At the time of the audit, June to September 2007, more than two-thirds of the mobile devices in these 24 agencies weren't using encryption at all.

But that's not the interesting part. The GAO also found that, in many cases, even the devices believed to be encrypted had problems. Sometimes the encryption wasn't actually installed. Or it wasn't configured correctly. Or it hadn't been turned on. Often, users hadn't been trained, sensitive information hadn't been inventoried, and crypto key control procedures hadn't been established.

You can read the gory details by downloading the report (it's on the Web at *www.gao.gov/new.items/d08525.pdf*). The real horror stories start on page 29.

(Predownload quiz: Guess which department hadn't installed encryption on *any* laptops, even though officials insisted that it had? Guess which hotshot technical agency said it had no way of telling whether encryption software had been successfully installed on a laptop? And guess which department's employees never used encryption because no one told them it was installed?)

■ Guess which department hadn't installed encryption on *any* laptops, though officials insisted that it had?

Even if you don't care about the dirt turned up by the audit, you should download the report. It includes a remarkably readable crib sheet on the different types of encryption for mobile device hard disks (full disk, file, folder, virtual disk), communications (VPNs, digital signatures and certificates) and handheld devices.

It also gives a good rundown of the categories of problems the agencies ran into with their encryption efforts, as well as a table listing the actual volume pricing that government agencies are getting. (One nice non-horror story from the report: The Department of Agriculture cut its own deal for 180,000 encryption licenses at $9.63 each, way below even the best government price schedule.)

In short, it's a useful, practical overview of the ups and downs of putting encryption on laptops, portable drives and BlackBerries. And it's based on real-world experience — even if, for most government agencies, that experience hasn't yet translated into success.

Why do you care? Because encryption is hard. And encryption is coming to portable devices near you. Whether because of regulations, lawsuits or common sense, soon or late you'll be doing this in your IT shop.

The more you learn now about someone else's foul-ups, failures and dead ends, the better you'll be able to avoid them. And as long as your tax dollars are being spent on these mistakes, you might as well get some value from the exercise.

Besides, what other report that you browse this year will tell you how the State Department dodged its audit: "Although the inventory provided by the agency indicated that the employees were assigned to the location that we visited, they were actually assigned to posts throughout the world."

Happy summer reading. ■

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